



# KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

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

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५ तेलंगाना, भारत  
కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారతదేశము

(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)

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

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

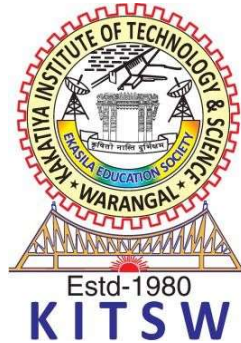
☎ : +91 9392055211, +91 7382564888

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (NETWORKS)

### B.Tech. CSE(NETWORKS) – REVISED SCHEME (URR'18) (For B19, B20 batches)

*of*

**(I, II, III, IV, V, VI, VII & VIII SEMESTERS)**



**KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15**  
(An Autonomous Institution under Kakatiya University, Warangal)



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

కాకతీయ ప్రేచ్ఛాగిక్కి ంవ్జ్ఞాన సంస్థాన, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారత్

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారతదేశము

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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 COMPUTER SCIENCE AND ENGINEERING (NETWORKS)

### VISION OF THE DEPARTMENT

- Attaining centre of excellence status in various fields of Computer Science and Engineering by offering worth full education, training and research to improve quality of software services for ever growing needs of the industry and society.

### MISSION OF THE DEPARTMENT

- Practice qualitative approach and standards to provide students better understanding and profound knowledge in the fundamentals and concepts of computer science with its allied disciplines.
- Motivate students in continuous learning to enhance their technical, communicational, and managerial skills to make them competent and cope with the latest trends, technologies, and improvements in computer science to have a successful career with professional ethics.
- Involve students in analyze, design and experimenting with contemporary research problems in computer science to impact socio-economic, political and environmental aspects of the globe.

## PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

### UG - COMPUTER SCIENCE & ENGINEERING (NETWORKS) – CSN

| PROGRAM EDUCATIONAL OBJECTIVES (PEOs) | Within first few years after graduation, the COMPUTER SCIENCE AND ENGINEERING (NETWORKS) graduates will be able to ...                                      |
|---------------------------------------|---|
| PEO1:<br>Technical Expertise          | apply the fundamental knowledge of the core courses of computer science and networks for developing the effective software and network technology solutions |

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| <b>PE02:</b><br>Successful Career                  | <i>excel in profession, higher education and entrepreneurship with updated technologies in software, computer networks and security based domains</i>                                  |
| <b>PE03:</b><br>Soft Skills and Life Long Learning | <i>exhibit professional ethics, effective communication and team work in solving engineering problems by adapting contemporary research towards sustainable development of society</i> |

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

**UG - COMPUTER SCIENCE & ENGINEERING (NETWORKS) – CSN**

| <b>PROGRAM OUTCOMES(POs)</b>                            | <b>At the time of graduation, the COMPUTER SCIENCE &amp; ENGINEERING (NETWORKS) 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, 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: Software Development and Quality assurance</b> | <i>apply the fundamental knowledge of computer science and engineering in developing effective software for real world complex engineering problems adapting advanced technologies</i>   |

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| <b>PS02: Maintenance</b>                     | <i>design computer networks protocols and configure solutions for various network applications using contemporary hardware and software tools</i>                             |
| <b>PS03: Immediate professional practice</b> | <i>implement effective securities standards and investigate efficiency of existing security measures by continuous adaptation of latest updates in cyber security domains</i> |



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**KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE:: WARANGAL – 15**  
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**SCHEME OF INSTRUCTION & EVALUATION**  
**I-SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

[5Th+4P+2MC]

| Sl. No        | Category | Course Code | Course Title   | Periods/week |          |           | Credits   | Evaluation scheme |            |            |            |             |             |
|---------------|----------|-------------|--|--------------|----------|-----------|-----------|-------------------|------------|------------|------------|-------------|-------------|
|               |          |             |  | L            | T        | P         |           | C                 | CIE        |            |            | ESE         | Total Marks |
|               |          |             |  |              |          |           |           |                   | 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      | U18PH103    | Engineering Physics                                    | 3            | 1        | -         | 4         | 10                | 30         | 40         | 60         | 100         |             |
| 4             | HSMC     | U18MH104    | English for Communication                              | 2            | -        | 2         | 3         | 10                | 30         | 40         | 60         | 100         |             |
| 5             | ESC      | U18EE105    | Basic Electrical Engineering                           | 3            | 1        | -         | 4         | 10                | 30         | 40         | 60         | 100         |             |
| 6             | ESC      | U18EE106    | Basic Electrical Engineering Laboratory                | -            | -        | 2         | 1         | 40                | -          | 40         | 60         | 100         |             |
| 7             | ESC      | U18CS107    | Programming for Problem Solving using C Laboratory     | -            | -        | 2         | 1         | 40                | -          | 40         | 60         | 100         |             |
| 8             | BSC      | U18PH108    | Engineering Physics Laboratory                         | —            | —        | 2         | 1         | 40                | -          | 40         | 60         | 100         |             |
| 9             | ESC      | U18ME109    | Workshop Practice                                      | -            | —        | 2         | 1         | 10                | 30         | 40         | 60         | 100         |             |
| 10            | MC       | U18EA110    | EAA *: Sports/Yoga/NSS                                 | -            | -        | 2         | -         | 100               | -          | 100        | -          | 100         |             |
| 11            | MC       | U18MH111    | Universal Human Value-I ( <i>Induction Programme</i> ) | -            | -        | -         | -         | -                 | -          | -          | -          | -           |             |
| <b>Total:</b> |          |             |  | <b>14</b>    | <b>3</b> | <b>12</b> | <b>22</b> | <b>280</b>        | <b>180</b> | <b>460</b> | <b>480</b> | <b>1000</b> |             |

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

EAA: Extra Academic Activity

\* indicates mandatory non-credit course

Total Contact Periods/Week: 29

Total Credits: 22

Stream-I: ME, CSE, IT, CSN, CSO

Stream-II: CE, EIE, EEE, ECE, ECI, CSM



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**SCHEME OF INSTRUCTION & EVALUATION**  
**II-SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

[5Th+2P+2MC]

| Sl. No        | Category | Course Code | Course Title                         | Periods/week |          |           | Credits   | Evaluation scheme |            |            |            |            |
|---------------|----------|-------------|--------------------------------------|--------------|----------|-----------|-----------|-------------------|------------|------------|------------|------------|
|               |          |             |                                      | L            | T        | P         |           | C                 | CIE        |            |            | ESE        |
|               |          |             |                                      |              |          |           | 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      | U18CH203    | Engineering Chemistry                | 3            | 1        | -         | 4         | 10                | 30         | 40         | 60         | 100        |
| 4             | ESC      | U18ME204    | Engineering Drawing                  | 2            | -        | 4         | 4         | 10                | 30         | 40         | 60         | 100        |
| 5             | ESC      | U18CE205    | Engineering Mechanics                | 3            | 1        | —         | 4         | 10                | 30         | 40         | 60         | 100        |
| 6             | ESC      | U18CS207    | Data Structures through C Laboratory | -            | -        | 2         | 1         | 40                | -          | 40         | 60         | 100        |
| 7             | BSC      | U18CH208    | Engg. Chemistry Laboratory           | —            | —        | 2         | 1         | 40                | -          | 40         | 60         | 100        |
| 8             | MC       | U18CH209    | Environmental Studies*               | 2            | —        | -         | -         | 40                | -          | 40         | 60         | 100        |
| 9             | MC       | U18EA210    | EAA : Sports/Yoga/NSS*               | -            | -        | 2         | -         | 100               | -          | 100        | -          | 100        |
| <b>Total:</b> |          |             |                                      | <b>16</b>    | <b>3</b> | <b>10</b> | <b>21</b> | <b>270</b>        | <b>150</b> | <b>420</b> | <b>480</b> | <b>900</b> |

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

EAA: Extra Academic Activity

\* indicates mandatory non-credit course

Total Contact Periods/Week: 29

Total Credits: 21

Stream-I: ME, CSE, IT, CSN, CSO

Stream-II: CE, EIE, EEE, ECE, ECI, CS

**Internships:** 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/industries 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 in VII semester



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**SCHEME OF INSTRUCTION & EVALUATION**  
**III-SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

**[7Th+2P+1MC]**

| S.No          | Category | Course Code | Course Title  | Periods/week |          |          | Credits   | Evaluation scheme |            |            |            |             |
|---------------|----------|-------------|---|--------------|----------|----------|-----------|-------------------|------------|------------|------------|-------------|
|               |          |             |   | L            | T        | P        |           | C                 | CIE        |            |            | ESE         |
|               |          |             |   |              |          |          | TA        |                   | MSE        | Total      |            |             |
| 1             | BSC      | U18MH301    | Engineering Mathematics - III                       | 3            | 1        | -        | 4         | 10                | 30         | 40         | 60         | 100         |
| 2             | HSMC     | U18MH302    | Professional English                                | —            | —        | 2        | 1         | 100               | -          | 100        | -          | 100         |
| 3             | PCC      | U18CN303    | Object Oriented Programming through JAVA            | 3            | 1        | -        | 4         | 10                | 30         | 40         | 60         | 100         |
| 4             | PCC      | U18CN304    | Database Management Systems                         | 3            | 1        | -        | 4         | 10                | 30         | 40         | 60         | 100         |
| 5             | PCC      | U18CN305    | Computer Architecture and Organization              | 3            | -        | -        | 3         | 10                | 30         | 40         | 60         | 100         |
| 6             | PCC      | U18CN306    | Advanced Data Structures                            | 3            | -        | -        | 3         | 10                | 30         | 40         | 60         | 100         |
| 7             | ESC      | U18EI309    | Digital Electronics                                 | 3            | -        | -        | 3         | 10                | 30         | 40         | 60         | 100         |
| 8             | PCC      | U18CN310    | Object Oriented Programming through Java Laboratory | -            | -        | 2        | 1         | 40                | -          | 40         | 60         | 100         |
| 9             | PCC      | U18CN311    | Database Management Systems Laboratory              | —            | —        | 2        | 1         | 40                | -          | 40         | 60         | 100         |
| 10            | MC       | U18MH315    | Essence of Indian Traditional Knowledge             | 2            | -        | -        | -         | 10                | 30         | 40         | 60         | 100         |
| <b>Total:</b> |          |             |   | <b>20</b>    | <b>3</b> | <b>6</b> | <b>24</b> | <b>250</b>        | <b>210</b> | <b>460</b> | <b>540</b> | <b>1000</b> |

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

Total Contact Periods/Week: 29  
 Stream-I: ME, CSE, IT, CSN, CSO

Total Credits: 24  
 Stream-II: CE, EIE, EEE, ECE, ECI, CSM



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**SCHEME OF INSTRUCTION & EVALUATION**  
**IV-SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

**[6Th+3P+1MC]**

| Sl. No        | Category | Course Code | Course Title                   | Periods/week |          |          | Credits<br>C | Evaluation scheme |            |            |            |             |
|---------------|----------|-------------|--------------------------------|--------------|----------|----------|--------------|-------------------|------------|------------|------------|-------------|
|               |          |             |                                | L            | T        | P        |              | CIE               |            |            | ESE        | Total Marks |
|               |          |             |                                |              |          |          |              | TA                | MSE        | Total      |            |             |
| 1             | OE       | U18OE401    | Open Elective-II               | 3            | 1        | -        | 4            | 10                | 30         | 40         | 60         | 100         |
| 2             | HSMC     | U18TP402    | Soft and Inter Personal Skills | -            | -        | 2        | 1            | 100               | -          | 100        | -          | 100         |
| 3             | OE       | U18OE403    | Open Elective-I                | 3            | -        | -        | 3            | 10                | 30         | 40         | 60         | 100         |
| 4             | PCC      | U18CN404    | Theory of Computation          | 3            | -        | -        | 3            | 10                | 30         | 40         | 60         | 100         |
| 5             | PCC      | U18CN405    | Software Engineering           | 3            | -        | -        | 3            | 10                | 30         | 40         | 60         | 100         |
| 6             | PCC      | U18CN406    | Operating Systems              | 3            | -        | -        | 3            | 10                | 30         | 40         | 60         | 100         |
| 7             | PCC      | U18CN407    | Unix Programming Laboratory    | -            | -        | 2        | 1            | 40                | -          | 40         | 60         | 100         |
| 8             | PCC      | U18CN408    | Advanced Java Laboratory       | -            | -        | 2        | 1            | 40                | -          | 40         | 60         | 100         |
| 9             | OE       | U18OE411    | Open Elective-I based lab      | -            | -        | 2        | 1            | 40                | -          | 40         | 60         | 100         |
| <b>Total:</b> |          |             |                                | <b>17</b>    | <b>1</b> | <b>8</b> | <b>20</b>    | <b>280</b>        | <b>180</b> | <b>460</b> | <b>540</b> | <b>1000</b> |
| 10            | MC       | U18CH416    | Environmental Studies*         | 2            | -        | -        | -            | 10                | 30         | 40         | 60         | 100         |

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]  
 Stream-I: ME, CSE, IT, CSN, CSO

Total Contact Periods/Week = 26  
 Stream-II: CE, EIE, EEE, ECE, ECI, CSM

Total Credits: 20

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| <p><b>Open Elective-I:</b><br/>         U18OE403A: Object Oriented Programming (CSE)<br/>         U18OE403B: Fluid Mechanics &amp; Hydraulic Machines (CE)<br/>         U18OE403C: Mechatronics (ME)<br/>         U18OE403D: Web Programming (IT)<br/>         U18OE403E: Microprocessors (ECE)<br/>         U18OE403F: Strength of Materials (ME)</p> | <p><b>Open Elective-II:</b><br/>         U18OE401A: Applicable Mathematics (MH)<br/>         U18OE401B: Basic Electronics Engineering (ECE)<br/>         U18OE401C: Elements of Mechanical Engineering (ME)<br/>         U18OE401D: Measurements &amp; Instrumentation (EIE)<br/>         U18OE401E: Fundamentals of Computer Networks (IT)<br/>         U18OE401F: Renewable Energy Sources (EEE)</p> | <p><b>Open Elective-I based Lab:</b><br/>         U18OE411A: Object Oriented Programming Lab (CSE)<br/>         U18OE411B: Fluid Mechanics &amp; Hydraulic Machines Lab (CE)<br/>         U18OE411C: Mechatronics Lab (ME)<br/>         U18OE411D: Web Programming Lab (IT)<br/>         U18OE411E: Microprocessors Lab (ECE)<br/>         U18OE411F: Strength of Materials Lab (CE)</p> |
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**SCHEME OF INSTRUCTION & EVALUATION**  
**V-SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

**[6Th+3P+Seminar]**

| Sl. No   | Category | Course Code | Course Title  | Periods/week |          |          | Credits     | Evaluation scheme |            |            |            |             |
|--|----------|-------------|---|--------------|----------|----------|-------------|-------------------|------------|------------|------------|-------------|
|  |          |             |   | L            | T        | P        |             | C                 | CIE        |            |            | ESE         |
|  |          |             |   |              |          |          | TA          |                   | MSE        | Total      |            |             |
| 1  | HSMC     | U18TP501    | Quantitative Aptitude & Logical Reasoning           | 2            | -        | -        | 1           | 10                | 30         | 40         | 60         | 100         |
| 2  | PE       | U18CN502    | Professional Elective - I / MOOC-I                  | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |
| 3  | PCC      | U18CN503    | Computer Networks                                   | 3            | 1        | -        | 4           | 10                | 30         | 40         | 60         | 100         |
| 4  | PCC      | U18CN504    | Design and Analysis of Algorithms                   | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |
| 5  | PCC      | U18CN505    | Compiler Design                                     | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |
| 6  | PCC      | U18CN506    | Machine Learning                                    | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |
| 7  | PCC      | U18CN507    | Computer Networks Laboratory                        | -            | -        | 2        | 1           | 40                | -          | 40         | 60         | 100         |
| 8  | PCC      | U18CN508    | Design and Analysis of Algorithms Laboratory        | -            | -        | 2        | 1           | 40                | -          | 40         | 60         | 100         |
| 9  | PCC      | U18CN509    | Machine Learning with Python Programming Laboratory | -            | -        | 2        | 1           | 40                | -          | 40         | 60         | 100         |
| 10   | PROJ     | U18CN510    | Seminar   | -            | -        | 2        | 1           | 100               | -          | 100        | -          | 100         |
| <b>Total:</b>  |          |             |   | <b>17</b>    | <b>1</b> | <b>8</b> | <b>21</b>   | <b>280</b>        | <b>180</b> | <b>460</b> | <b>540</b> | <b>1000</b> |
| <b>Additional Learning*:</b> Maximum credits allowed for Honours/Minor |          |             |   | -            | -        | -        | 7           | -                 | -          | -          | -          | -           |
| <b>Total credits for Honours / Minor students:</b>                     |          |             |   | -            | -        | -        | <b>21+7</b> | -                 | -          | -          | -          | -           |

\* List of courses for additional learning through **MOOCs** towards Honours/Minor in Engineering shall be prescribed by the department under Honours/Minor Curricula

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

Total Contact Periods/Week :26

Total Credits :21

|  |   |
|--|---|
| <b>Professional Elective-I / MOOCs-I:</b><br><b>U18CN502A: Artificial Intelligence</b><br><b>U18CN502B: Data Mining and Data Warehousing</b><br><b>U18CN502C: Digital Image processing</b><br><b>U18CN502M: MOOCs course</b> | <b>MOOCs:</b> Students are encouraged to do Massive Open Online Courses (MOOCs) on SWAYAM platform ( <a href="https://www.swayam.gov.in">https://www.swayam.gov.in</a> ) offered by NPTEL, CEC, IIM-B, IGNOU. Students shall contact the Head of the Department (HoD) to get their interested MOOCs approved by the HoD/Dean Academic Affairs for proper transfer of the credits for the MOOC |
|--|---|



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (NETWORKS)**  
**KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE:: WARANGAL – 15**  
*(An Autonomous Institute under Kakatiya University, Warangal)*

**SCHEME OF INSTRUCTION & EVALUATION**  
**VI-SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

**[5Th+3P+1MC+Miniproject]**

| Sl. No  | Category | Course Code | Course Title                          | Periods/week |          |          | Credits     | Evaluation scheme |            |            |            |             |             |
|---|----------|-------------|---------------------------------------|--------------|----------|----------|-------------|-------------------|------------|------------|------------|-------------|-------------|
|   |          |             |                                       | L            | T        | P        |             | C                 | CIE        |            |            | ESE         | Total Marks |
|   |          |             |                                       |              |          |          |             |                   | TA         | MSE        | Total      |             |             |
| 1   | MC       | U18MH601    | Universal Human Values-II             | 2            | 1        | —        | -           | 10                | 30         | 40         | 60         | 100         |             |
| 2   | OE       | U18OE602    | Open Elective - III                   | 3            | —        | —        | 3           | 10                | 30         | 40         | 60         | 100         |             |
| 3   | PE       | U18CN603    | Professional Elective - II / MOOC-II  | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |             |
| 4   | PCC      | U18CN604    | Cryptography and Network Security     | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |             |
| 5   | PCC      | U18CN605    | Cloud Computing                       | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |             |
| 6   | PCC      | U18CN606    | Internet of Things                    | 3            | -        | -        | 3           | 10                | 30         | 40         | 60         | 100         |             |
| 7   | PCC      | U18CN607    | Cryptography and Network Security Lab | -            | -        | 2        | 1           | 40                | -          | 40         | 60         | 100         |             |
| 8   | PCC      | U18CN608    | Cloud Computing Laboratory            | -            | -        | 2        | 1           | 40                | -          | 40         | 60         | 100         |             |
| 9   | PCC      | U18CN609    | Internet of Things Laboratory         | -            | -        | 2        | 1           | 40                | -          | 40         | 60         | 100         |             |
| 10  | PROJ     | U18CN610    | Mini Project                          | -            | -        | 2        | 1           | 100               | -          | 100        | -          | 100         |             |
| <b>Total:</b>   |          |             |                                       | <b>17</b>    | <b>1</b> | <b>8</b> | <b>19</b>   | <b>280</b>        | <b>180</b> | <b>460</b> | <b>540</b> | <b>1000</b> |             |
| <i>Additional Learning*:Maximum credits allowed for Honours/Minor</i> |          |             |                                       | -            | -        | -        | 7           | -                 | -          | -          | -          | -           |             |
| <b>Total credits for Honours/Minor students:</b>                      |          |             |                                       | -            | -        | -        | <b>19+7</b> | -                 | -          | -          | -          | -           |             |

\*List of courses for additional learning through **MOOCs** towards Honours/Minor in Engineering shall be prescribed by the department under Honours/ Minor Curricula

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

Total Contact Periods/Week: 26

Total Credits: 19

**Open Elective-III:**

U18OE602A: Disaster Management  
 U18OE602B: Project Management  
 U18OE602C: Professional Ethics in Engineering  
 U18OE602D: Rural Technology and Community Development

**Professional Elective-II / MOOC-II:**

U18CN603A: Mobile Computing  
 U18CN603B: Wireless Sensor Networks  
 U18CN603C: Wireless Communications  
 U18CN603M: MOOCs Course



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**SCHEME OF INSTRUCTION & EVALUATION**  
**VII SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

VII-

[4Th+2P+ MP-I+ internship]

| Sl. No   | Category    | Course Code     | Course Title                              | Periods/week |          |           | Credits     | Evaluation scheme |            |            |            |            |
|--|-------------|-----------------|---|--------------|----------|-----------|-------------|-------------------|------------|------------|------------|------------|
|  |             |                 |   | L            | T        | P         |             | C                 | CIE        |            |            | ESE        |
|  |             |                 |   |              |          |           | TA          |                   | MSE        | Total      |            |            |
| 1  | <b>HSMC</b> | <b>U18MH701</b> | Management, Economics and Accountancy     | 3            | —        | —         | 3           | 10                | 30         | 40         | 60         | 100        |
| 2  | <b>PE</b>   | <b>U18CN702</b> | Professional Elective - III / MOOC-III    | 3            | -        | -         | 3           | 10                | 30         | 40         | 60         | 100        |
| 3  | <b>PE</b>   | <b>U18CN703</b> | Professional Elective - IV / MOOC-IV      | 3            | -        | -         | 3           | 10                | 30         | 40         | 60         | 100        |
| 4  | <b>PCC</b>  | <b>U18CN704</b> | Advanced Computer Networks                | 3            | -        | -         | 3           | 10                | 30         | 40         | 60         | 100        |
| 5  | <b>PCC</b>  | <b>U18CN705</b> | Advanced Computer Networks Laboratory     | -            | -        | 2         | 1           | 40                | -          | 40         | 60         | 100        |
| 6  | <b>PCC</b>  | <b>U18CN706</b> | Mobile Application Development Laboratory | -            | -        | 2         | 1           | 40                | -          | 40         | 60         | 100        |
| 7  | <b>PROJ</b> | <b>U18CN707</b> | Major Project - Phase - I                 | -            | -        | 6         | 3           | 100               | -          | 100        | -          | 100        |
| 8  | <b>MC</b>   | <b>U18CN708</b> | Internship Evaluation                     | -            | -        | 2         | -           | -                 | -          | -          | -          | -          |
| <b>Total:</b>  |             |                 |   | <b>12</b>    | <b>—</b> | <b>12</b> | <b>17</b>   | <b>220</b>        | <b>120</b> | <b>340</b> | <b>360</b> | <b>700</b> |
| <b>Additional Learning</b> *:Maximum credits allowed for Honours/Minor |             |                 |   | -            | -        | -         | 7           | -                 | -          | -          | -          | -          |
| <b>Total credits for Honours/Minor students:</b>                       |             |                 |   | <b>-</b>     | <b>-</b> | <b>-</b>  | <b>17+7</b> | <b>-</b>          | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   |

\* List of courses for additional learning through **MOOCs** towards Honours/Minor in Engineering shall be prescribed by the department under Honours/ Minor Curricula

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

Total Contact Periods/Week: 24

Total Credits: 17

|   |   |
|---|---|
| <u><b>Professional Elective-III / MOOC-III:</b></u><br><b>U18CN702A: Block Chain Technologies</b><br><b>U18CN702B: Storage Area Networks</b><br><b>U18CN702C: High Speed Networks</b><br><b>U18CN702M: MOOCs course</b> | <u><b>Professional Elective-IV / MOOC-IV:</b></u><br><b>U18CN703A: Ethical Hacking</b><br><b>U18CN703B: Big Data Analytics</b><br><b>U18CN703C: Web and Database Security</b><br><b>U18CN703M: MOOCs course</b> |
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**SCHEME OF INSTRUCTION & EVALUATION**  
**VIII SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

**[3Th+ 1MP-II]**

| Sl. No  | Category | Course Code | Course Title                         | Periods/week |   |    | Credits     | Evaluation scheme |     |       |     |     |
|---|----------|-------------|--------------------------------------|--------------|---|----|-------------|-------------------|-----|-------|-----|-----|
|   |          |             |                                      | L            | T | P  |             | C                 | CIE |       |     | ESE |
|   |          |             |                                      |              |   |    | TA          |                   | MSE | Total |     |     |
| 1   | PE       | U18CN801    | Professional Elective - V / MOOC-V   | 3            | - | -  | 3           | 10                | 30  | 40    | 60  | 100 |
| 2   | PE       | U18CN802    | Professional Elective - VI / MOOC-VI | 3            | - | -  | 3           | 10                | 30  | 40    | 60  | 100 |
| 3   | OE       | U18OE803    | Open Elective - IV / MOOC-VII        | 3            | - | -  | 3           | 10                | 30  | 40    | 60  | 100 |
| 4   | PROJ     | U18CN804    | Major Project - Phase - II           | -            | - | 14 | 7           | 60                | -   | 60    | 40  | 100 |
| <b>Total</b>  |          |             |                                      | 9            | - | 14 | 16          | 90                | 90  | 180   | 220 | 400 |
| <i>Additional Learning*:Maximum credits allowed for Honours/Minor</i> |          |             |                                      | -            | - | -  | 7           | -                 | -   | -     | -   | -   |
| <b>Total credits for Honours /Minor students:</b>                     |          |             |                                      | -            | - | -  | <b>16+7</b> | -                 | -   | -     | -   | -   |

\* List of courses for additional learning through **MOOCs** towards Honours/Minor in Engineering shall be prescribed by the department under Honours/ Minor Curricula

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

Total Contact Periods/Week: 23

Total Credits: 16

|  |  |  |
|--|--|--|
| <p><b>Professional Elective-V / MOOC-V:</b><br/>         U18CN801A: Software Defined Networking<br/>         U18CN801B: Cyber Security and Digital Forensic<br/>         U18CN801C: Advanced Real-World Data Networks<br/>         U18CN801M: MOOCs course</p> | <p><b>Professional Elective-VI/ MOOC-VI:</b><br/>         U18CN802A: Network Automation<br/>         U18CN802B: Data Science<br/>         U18CN802C: Fog and Edge Computing<br/>         U18CN802M: MOOCs course</p> | <p><b>Open Elective-IV/MOOCs-VII:</b><br/>         U18OE803A: Operations Research<br/>         U18OE803B: Management Information Systems<br/>         U18OE803C: Entrepreneurship Development<br/>         U18OE803D: Forex &amp; Foreign Trade<br/>         U18OE803M: MOOCs Course</p> |
|--|--|--|



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**SCHEME OF INSTRUCTION & EVALUATION**

**I to VIII SEMESTER OF 4-YEAR B. TECH DEGREE PROGRAM**

**SEMESTER Vs COURSE CATEGORY WEIGHTAGE**

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

| Semester                                  | Number of Courses / Number of Credits ( <i>Course Category wise</i> ) |                      |                    |                    |                 |                     |        |                   |                    | <i>B.Tech<br/>(Honours/Minor)<br/>Programme</i>  |
|---|---|----------------------|--------------------|--------------------|-----------------|---------------------|--------|-------------------|--------------------|--|
|   | BSC   | ESC                  | HSM<br>C           | PCC                | OE              | PE                  | M<br>C | PRO<br>J          | TOTAL              |  |
| <b>I</b>                                  | 3/9   | 5/10                 | 1/3                | -                  | -               | -                   | 2/0    | -                 | 11/22              | <i>Additional 20<br/>credits through<br/>8 courses out of the<br/>list of courses<br/>prescribed under<br/>Honours/Minor<br/>curricula</i> |
| <b>II</b>                                 | 3/9   | 4/12                 | -                  | -                  | -               | -                   | 2/0    | -                 | 9/21               |  |
| <b>III</b>                                | 1/4   | 1/3                  | 1/1                | 6/16               | -               | -                   | 1/0    | -                 | 10/24              |  |
| <b>IV</b>                                 | -   | -                    | 1/1                | 5/11               | 3/8             | -                   | 1/0    | -                 | 10/20              |  |
| <b>V</b>                                  | -   | -                    | 1/1                | 7/16               | -               | 1/3                 | -      | 1/1               | 10/21              |  |
| <b>VI</b>                                 | -   | -                    |                    | 6/12               | 1/3             | 1/3                 | 1/0    | 1/1               | 10/19              |  |
| <b>VII</b>                                | -   | -                    | 1/3                | 3/5                | -               | 2/6                 | 1/0    | 1/3               | 8/17               |  |
| <b>VIII</b>                               | -   | -                    | -                  | -                  | 1/3             | 2/6                 | -      | 1/7               | 4/16               |  |
| <b>Total</b>                              | 7/22  | 10/25                | 5/9                | 26/60              | 5/14            | 6/18                | 8/0    | 4/12              | 72/160             | <i>(71+8) / (160+20)</i>   |
| <b>% Weightage of<br/>Course Category</b> | 13.75 %<br>(22/160)   | 15.625 %<br>(25/160) | 5.625 %<br>(9/160) | 37.5 %<br>(60/160) | 8.75 % (14/160) | 11.25 %<br>(18/160) | 0 %    | 7.5 %<br>(12/160) | 100 %<br>(160/160) | -  |