



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**C&C, C&CE**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Subject                                                                                                                         | L | P | C         |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Digital System Design                                                                                                           | 4 | - | 3         |
| 2                    | Advanced Computer Architecture                                                                                                  | 4 | - | 3         |
| 3                    | Wireless Communications and Networks                                                                                            | 4 | - | 3         |
| 4                    | Digital Data Communications                                                                                                     | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>I. Data Base Management Systems<br>II. Information Theory and Coding Techniques<br>III. Big Data Analytics | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>I. Internet Protocols<br>II. Image & Video Processing<br>III. Objective Oriented Programming              | 4 | - | 3         |
| 7                    | System Design & Data Communications Lab                                                                                         |   | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                 |   |   | <b>20</b> |

## II Semester

| S. No.               | Subject                                                                                                                | L | P | C         |
|----------------------|------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Advanced Operating Systems                                                                                             | 4 | - | 3         |
| 2                    | Advanced Computer Networks                                                                                             | 4 | - | 3         |
| 3                    | Advanced Digital Signal Processing                                                                                     | 4 | - | 3         |
| 4                    | Optical Communications and Networks                                                                                    | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>I. EMI / EMC<br>II. Internet of Things<br>III. Soft Computing Techniques<br>IV. Cyber Security  | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>I. Embedded System Design<br>II. Radar Signal Processing<br>III. Network Security & Cryptography | 4 | - | 3         |
| 7                    | Advanced Communications Lab                                                                                            | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                        |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |

# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

## **For COMMUNICATION SYSTEMS**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                          | L | P | C         |
|----------------------|------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Detection & Estimation Theory                                                                                                | 4 | - | 3         |
| 2                    | Digital Data Communications                                                                                                  | 4 | - | 3         |
| 3                    | Optical Communication Technology                                                                                             | 4 | - | 3         |
| 4                    | Advanced Digital Signal Processing                                                                                           | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>I. Radar Signal Processing<br>II. RF Circuit Design<br>III. Advanced Computer Networks                  | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>I. Wireless LANs and PANs<br>II. Mobile Computing Technologies<br>III. Network Security & Cryptography | 4 | - | 3         |
| 7                    | Optical & Data Communications Laboratory                                                                                     | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                              |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                   | L | P | C         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Coding Theory and Applications                                                                                        | 4 | - | 3         |
| 2                    | Wireless Communications and Networks                                                                                  | 4 | - | 3         |
| 3                    | Image and Video Processing                                                                                            | 4 | - | 3         |
| 4                    | Software Defined Radio                                                                                                | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>I. Soft Computing Techniques<br>II. Internet Protocols<br>III. Cyber Security                  | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>I. Optical Networks<br>II. DSP Processors and Architectures<br>III. Radio and Navigational Aids | 4 | - | 3         |
| 7                    | Advanced Communications Laboratory                                                                                    | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                       |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**DECS, ECE, DECE**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**



## I Semester

| S. No.               | Name of the Subject                                                                                                                    | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Digital System Design                                                                                                                  | 4 | - | 3         |
| 2                    | Detection & Estimation Theory                                                                                                          | 4 | - | 3         |
| 3                    | Digital Data Communications                                                                                                            | 4 | - | 3         |
| 4                    | Advanced Digital Signal Processing                                                                                                     | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>I. Transform Techniques<br>II. VLSI Technology & Design<br>III. Radar Signal Processing                           | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>I. Statistical Signal Processing<br>II. Optical Communication Technology<br>III. Network Security & Cryptography | 4 | - | 3         |
| 7                    | 1. System Design & Data Communications Lab                                                                                             | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                        |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                                                     | L | P | C         |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Coding Theory & Applications                                                                                                                            | 4 | - | 3         |
| 2                    | Embedded System Design                                                                                                                                  | 4 | - | 3         |
| 3                    | Image and Video Processing                                                                                                                              | 4 | - | 3         |
| 4                    | Wireless Communications & Networks                                                                                                                      | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>I. CMOS Analog & Digital IC Design<br>II. Advanced Computer Architecture<br>III. Soft Computing Techniques<br>IV. Cyber Security | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>I. DSP Processors and Architectures<br>II. EMI / EMC<br>III. Object Oriented Programming                                          | 4 | - | 3         |
| 7                    | Advanced Communications Laboratory                                                                                                                      | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                                         |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**DSCE**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                       | L | P | C         |
|----------------------|---------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Digital System Design                                                                                                     | 4 | - | 3         |
| 2                    | VLSI Technology and Design                                                                                                | 4 | - | 3         |
| 3                    | Digital Data Communications                                                                                               | 4 | - | 3         |
| 4                    | Advanced Computer Architecture                                                                                            | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>I. Wireless Communications and Networks<br>II. Digital Design Using HDL<br>III. Internet Protocols   | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>I. Software Defined Radio<br>II. Network Security and Cryptography<br>III. Image & Video Processing | 4 | - | 3         |
| 7                    | System Design & Data Communications Lab                                                                                   | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                           |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                      | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Embedded System Design                                                                                   | 4 | - | 3         |
| 2                    | CMOS Analog and Digital IC Design                                                                        | 4 | - | 3         |
| 3                    | DSP Processors & Architecture                                                                            | 4 | - | 3         |
| 4                    | Design for Testability                                                                                   | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>I. System On Chip Design<br>II. Soft Computing Techniques<br>III. Cyber Security  | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>I. Embedded Real Time Operating Systems<br>II. High Speed Networks<br>III. EMI/EMC | 4 | - | 3         |
| 7                    | Embedded System Design Lab                                                                               | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                          |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



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# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**EMBEDDED SYSTEMS**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**

**KAKINADA - 533 003, Andhra Pradesh, India**



**FirstRanker.com**

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## I Semester

| S. No.               | Name of the Subject                                                                                                               | L | P | C         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Digital System Design                                                                                                             | 4 | - | 3         |
| 2                    | Embedded System Design                                                                                                            | 4 | - | 3         |
| 3                    | Embedded Real Time Operating Systems                                                                                              | 4 | - | 3         |
| 4                    | Embedded - C                                                                                                                      | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Sensors and Actuators<br>2. Network Security & Cryptography<br>3. Advanced Computer Architecture          | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. Embedded Computing<br>2. Soft Computing Techniques<br>3. Advanced Operating Systems<br>4. Cyber Security | 4 | - | 3         |
| 7                    | Embedded C-Laboratory                                                                                                             | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                   |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                              | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Hardware Software Co-Design                                                                                                      | 4 | - | 3         |
| 2                    | Digital Signal Processors and Architecture                                                                                       | 4 | - | 3         |
| 3                    | Embedded Networking                                                                                                              | 4 | - | 3         |
| 4                    | CPLD and FPGA Architectures and Applications                                                                                     | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. CMOS Mixed Signal Circuit Design<br>2. Micro Electro Mechanical System Design<br>3. Internet Protocols | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. System on Chip Design<br>2. Wireless LANs and PANs<br>3. Multimedia and Signal Coding                   | 4 | - | 3         |
| 7                    | Embedded System Design Laboratory                                                                                                | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                  |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For  
I&CS**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                                     | L | P | C         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Transducers and Sensors                                                                                                                 | 4 | - | 3         |
| 2                    | Digital Control Systems                                                                                                                 | 4 | - | 3         |
| 3                    | Fiber Optic Sensors and Devices                                                                                                         | 4 | - | 3         |
| 4                    | Digital System Design                                                                                                                   | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Adaptive Control Systems<br>2. Soft Computing Techniques<br>3. Cyber Security<br>4. Object Oriented Programming | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. Fuzzy Based Control Systems<br>2. VLSI Technology and Design<br>3. Advanced Digital Signal Processing          | 4 | - | 3         |
| 7                    | Transducers & Instrumentation Lab                                                                                                       | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                         |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                                 | L | P | C         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Data Acquisition Systems                                                                                                            | 4 | - | 3         |
| 2                    | Bio-Medical Instrumentation                                                                                                         | 4 | - | 3         |
| 3                    | Process Control Instrumentation                                                                                                     | 4 | - | 3         |
| 4                    | Embedded System Design                                                                                                              | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. Non Linear and Optimal Control Systems<br>2. PC Based Instrumentation<br>3. DSP Processors & Architecture | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. EMI / EMC<br>2. Control and guidance systems<br>3. Analytical Instrumentation                              | 4 | - | 3         |
| 7                    | Process Control Instrumentation Lab                                                                                                 | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                     |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**MICROWAVE & COMMUNICATION ENGINEERING**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                                                | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Advanced Electro Magnetic Theory                                                                                                                   | 4 | - | 3         |
| 2                    | Microwave Components & Measurements                                                                                                                | 4 | - | 3         |
| 3                    | Microwave Solid State Devices                                                                                                                      | 4 | - | 3         |
| 4                    | Digital Data Communications                                                                                                                        | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Microwave Integrated Circuits<br>2. Advanced Digital Signal Processing<br>3. Detection & Estimation Theory                 | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. Optical Communication Technology<br>2. Statistical Signal Processing<br>3. Soft Computing Techniques<br>4. Cyber Security | 4 | - | 3         |
| 7                    | Microwave Measurements Lab                                                                                                                         | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                                    |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                           | L | P | C         |
|----------------------|-----------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Advanced Antenna Theory & Design                                                              | 4 | - | 3         |
| 2                    | Phased Array Systems                                                                          | 4 | - | 3         |
| 3                    | Software Defined Radio                                                                        | 4 | - | 3         |
| 4                    | Wireless Communications & Networks                                                            | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. Microwave Networks<br>2. EMI / EMC<br>3. Radio & Navigational Aids  | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. Smart Antennas<br>2. RF Circuit Design<br>3. Radar Signal Processing | 4 | - | 3         |
| 7                    | Antenna Simulation Laboratory                                                                 | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                               |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**SSP, DIP, CE&SP AND IP**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                                | L | P | C         |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Coding Theory and Applications                                                                                                     | 4 | - | 3         |
| 2                    | Transform Techniques                                                                                                               | 4 | - | 3         |
| 3                    | Advanced Digital Signal Processing                                                                                                 | 4 | - | 3         |
| 4                    | Digital Data Communications                                                                                                        | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Statistical Signal Processing<br>2. Network Security and Cryptography<br>3. Pattern Recognition Principles | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. Speech Processing<br>2. Soft Computing Techniques<br>3. Object Oriented Programming<br>4. Cyber Security  | 4 | - | 3         |
| 7                    | Signal Processing Laboratory                                                                                                       | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                    |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                | L | P | C         |
|----------------------|--------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Adaptive Signal Processing                                                                                         | 4 | - | 3         |
| 2                    | Image & Video Processing                                                                                           | 4 | - | 3         |
| 3                    | Detection and Estimation Theory                                                                                    | 4 | - | 3         |
| 4                    | DSP Processors and Architectures                                                                                   | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. Computer Vision<br>2. Embedded System Design<br>3. Bio-Medical Signal Processing         | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. Internet Protocols<br>2. Radar Signal Processing<br>3. Wireless Communications & Networks | 4 | - | 3         |
| 7                    | Advanced Signal Processing Laboratory                                                                              | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                    |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**TELEMATICS**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**

**KAKINADA - 533 003, Andhra Pradesh, India**



## I Semester

| S. No.               | Name of the Subject                                                                                                                          | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Telecommunication Switching Systems                                                                                                          | 4 | - | 3         |
| 2                    | Optical Communication Technology                                                                                                             | 4 | - | 3         |
| 3                    | Mobile Cellular Communications                                                                                                               | 4 | - | 3         |
| 4                    | Digital Data Communications                                                                                                                  | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Stochastic Signal Processing<br>2. Software Defined Radio<br>3. Radio and Navigational Aids                          | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. Digital System Design<br>2. Cyber Security<br>3. Network Security and Cryptography<br>4. Advanced Computer Networks | 4 | - | 3         |
| 7                    | Wireless Communications Lab                                                                                                                  | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                              |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                               | L | P | C         |
|----------------------|---------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Internet Protocols                                                                                | 4 | - | 3         |
| 2                    | Coding Theory and Applications                                                                    | 4 | - | 3         |
| 3                    | Wireless Communication & Networks                                                                 | 4 | - | 3         |
| 4                    | Telematics and Control                                                                            | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. Internet of Things<br>2. Adhoc Networks<br>3. Multi Media Signal Coding | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. DSP Processors and Architectures<br>2. GPS<br>3. Design for Testability  | 4 | - | 3         |
| 7                    | Advanced Communications Lab                                                                       | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                   |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**VLSI&ES, ES&VLSI, VLSID&ES**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                     | L | P | C         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Digital System Design                                                                                                   | 4 | - | 3         |
| 2                    | VLSI Technology and Design                                                                                              | 4 | - | 3         |
| 3                    | CMOS Analog IC Design                                                                                                   | 4 | - | 3         |
| 4                    | Hardware Software Co-Design                                                                                             | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Embedded - C<br>2. CMOS Digital IC Design<br>3. Soft Computing Techniques<br>4. Cyber Security  | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. Advanced Operating Systems<br>2. System on Chip Design<br>3. Network Security and Cryptography | 4 | - | 3         |
| 7                    | VLSI Laboratory                                                                                                         | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                         |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                                                                        | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Embedded System Design                                                                                                                                                     | 4 | - | 3         |
| 2                    | CMOS Mixed Signal Circuit Design                                                                                                                                           | 4 | - | 3         |
| 3                    | Embedded Real Time Operating Systems                                                                                                                                       | 4 | - | 3         |
| 4                    | Design For Testability                                                                                                                                                     | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. DSP Processors & Architectures<br>2. Low Power VLSI Design<br>3. VLSI Signal Processing                                                          | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. Micro Electro Mechanical Systems (MEMS) Design<br>2. CPLD and FPGA Architectures and Applications.<br>3. Semiconductor Memory Design and Testing. | 4 | - | 3         |
| 7                    | Embedded System Design Laboratory                                                                                                                                          | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                                                            |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |



# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**VLSI, VLSID, VLSISD**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Semester

| S. No.               | Name of the Subject                                                                                                                          | L | P | C         |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | Digital System Design                                                                                                                        | 4 | - | 3         |
| 2                    | VLSI Technology and Design                                                                                                                   | 4 | - | 3         |
| 3                    | CMOS Analog IC Design                                                                                                                        | 4 | - | 3         |
| 4                    | CMOS Digital IC Design                                                                                                                       | 4 | - | 3         |
| 5                    | <b>Elective I</b><br>1. Digital Design using HDL<br>2. Advanced Operating Systems<br>3. Soft Computing Techniques<br>4. Cyber Security       | 4 | - | 3         |
| 6                    | <b>Elective II</b><br>1. CPLD and FPGA Architectures and Applications<br>2. Advanced Computer Architecture<br>3. Hardware Software Co-Design | 4 | - | 3         |
| 7                    | Front end VLSI Design Laboratory                                                                                                             | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                              |   |   | <b>20</b> |

## II Semester

| S. No.               | Name of the Subject                                                                                                                       | L | P | C         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------|
| 1                    | CMOS Mixed Signal Circuit Design                                                                                                          | 4 | - | 3         |
| 2                    | Embedded System Design                                                                                                                    | 4 | - | 3         |
| 3                    | Low Power VLSI Design                                                                                                                     | 4 | - | 3         |
| 4                    | Design For Testability                                                                                                                    | 4 | - | 3         |
| 5                    | <b>Elective III</b><br>1. CAD for VLSI<br>2. DSP Processors & Architectures<br>3. VLSI Signal Processing                                  | 4 | - | 3         |
| 6                    | <b>Elective IV</b><br>1. System on Chip Design<br>2. Optimization Techniques in VLSI Design<br>3. Semiconductor Memory Design and Testing | 4 | - | 3         |
| 7                    | 1. Back end VLSI Design Laboratory                                                                                                        | - | 3 | 2         |
| <b>Total Credits</b> |                                                                                                                                           |   |   | <b>20</b> |

**III Semester**

| S. No.        | Subject                 | L  | P  | Credits |
|---------------|-------------------------|----|----|---------|
| 1             | Comprehensive Viva-Voce | -- | -- | 2       |
| 2             | Seminar – I             | -- | -- | 2       |
| 3             | Project Work Part – I   | -- | -- | 16      |
| Total Credits |                         |    |    | 20      |

**IV Semester**

| S. No.        | Subject                | L  | P  | Credits |
|---------------|------------------------|----|----|---------|
| 1             | Seminar – II           | -- | -- | 2       |
| 2             | Project Work Part - II | -- | -- | 18      |
| Total Credits |                        |    |    | 20      |