**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**
**KAKINADA – 533 003, Andhra Pradesh, India**
**DEPARTMENT OF MECHANICAL ENGINEERING**

# COURSE STRUCTURE

## I Year – I SEMESTER

| Sl. No | Course Code | Subjects | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BSC-1 | Calculus & Differential Equations (M-I) | 3 | 0 | 0 | 3 |
| 2 | BSC-2 | Engineering Physics | 3 | 0 | 0 | 3 |
| 3 | ESC-1 | Programming for Problem Solving | 3 | 0 | 0 | 3 |
| 4 | HSC-1 | Communicative English | 3 | 0 | 0 | 3 |
| 5 | ESC-2 | Engineering Drawing | 2 | 0 | 2 | 3 |
| 6 | BSC-L1 | Engineering Physics Lab | 0 | 0 | 3 | 1.5 |
| 7 | ESC-L1 | Programming for Problem Solving Using C Laboratory | 0 | 0 | 3 | 1.5 |
| 8 | HSC-L1 | English Communication Skills Laboratory | 0 | 0 | 3 | 1.5 |
| 9 | MC -1 | Environmental Science | 2 | 0 | 0 | 0 |
| **Total Credits** | | | | | | **19.5** |

## I Year – II SEMESTER

| Sl.No | Course Code | Subjects | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BSC-3 | Linear Algebra & Numerical Methods (M-II) | 3 | 0 | 0 | 3 |
| 2 | BSC-4 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 3 | ESC-3 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 4 | ESC-4 | Basic Electrical & Electronics Engineering | 3 | 0 | 0 | 3 |
| 5 | ESC-5 | Thermodynamics | 3 | 0 | 0 | 3 |
| 6 | ESC-L2 | Workshop Practice Lab | 0 | 0 | 3 | 1.5 |
| 7 | BSC-L2 | Engineering Chemistry Laboratory | 0 | 0 | 3 | 1.5 |
| 8 | ESC-L3 | Basic Electrical & Electronics Engineering Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC-2 | Constitution of India | 2 | 0 | 0 | 0 |
| **Total Credits** | | | | | | **19.5** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
## DEPARTMENT OF MECHANICAL ENGINEERING

### II YEAR I SEMESTER

| S. No. | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BSC-5 | Vector Calculus, Fourier Transforms and PDE(M-III) | 3 | 0 | 0 | 3 |
| 2 | PCC-1 | Mechanics of Solids | 3 | 0 | 0 | 3 |
| 3 | PCC-2 | Fluid Mechanics & Hydraulic Machines | 3 | 0 | 0 | 3 |
| 4 | PCC-3 | Production Technology | 3 | 0 | 0 | 3 |
| 5 | PCC-4 | Kinematics of Machinery | 3 | 0 | 0 | 3 |
| 6 | PCC-L1 | Computer Aided Engineering Drawing Practice | 0 | 0 | 3 | 1.5 |
| 7 | PCC-L2 | Fluid Mechanics & Hydraulic Machines Lab | 0 | 0 | 3 | 1.5 |
| 8 | PCC-L3 | Production Technology Lab | 0 | 0 | 3 | 1.5 |
| 9 | SOC-1 | Drafting and Modeling Lab | 0 | 0 | 4 | 2 |
| 10 | MC-3 | Essence of Indian Traditional Knowledge | 2 | 0 | 0 | 0 |
| | | **Total Credits** | | | | **21.5** |

### II YEAR II SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | ESC-6 | Material Science & Metallurgy | 3 | 0 | 0 | 3 |
| 2 | BSC-6 | Complex Variables and Statistical Methods | 3 | 0 | 0 | 3 |
| 3 | PCC-5 | Dynamics of Machinery | 3 | 0 | 0 | 3 |
| 4 | PCC-6 | Thermal Engineering-I | 3 | 0 | 0 | 3 |
| 5 | HSC-2 | Industrial Engineering and Management | 3 | 0 | 0 | 3 |
| 6 | ESC-L4 | Mechanics of Solids and Metallurgy Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC-L6 | Machine Drawing Practice | 0 | 0 | 3 | 1.5 |
| 8 | PCC-L7 | Theory of Machines Lab | 0 | 0 | 3 | 1.5 |
| 9 | SOC-2 | Python Programming Lab | 1 | 0 | 2 | 2 |
| | | **Total Credits** | | | | **21.5** |
| **Honors/Minor courses** | | | **4** | **0** | **0** | **4** |

* At the end of II Year II Semester, students must complete summer internship spanning between 1 to 2 months (Minimum of 6 weeks), @ Industries/ Higher Learning Institutions/ APSSDC.

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF MECHANICAL ENGINEERING

### III B.TECH I SEMESTER

| S No | Code | Course Title | Hours | | | Credits |
|---|---|---|---|---|---|---|
| | | | L | T | P | |
| 1 | PCC-7 | Thermal Engineering-II | 3 | 0 | 0 | 3 |
| 2 | PCC-8 | Design of Machine Members-I | 3 | 0 | 0 | 3 |
| 3 | PCC-9 | Machining, Machine Tools & Metrology | 3 | 0 | 0 | 3 |
| 4 | OE-1 | 1. Sustainable Energy Technologies<br>2. Operations Research<br>3. Nano Technology<br>4. Thermal Management of Electronic systems | 3 | 0 | 0 | 3 |
| 5 | PE-I | 1. Finite Element Methods<br>2. Industrial Robotics<br>3. Advanced Materials<br>4. Renewable Energy Sources<br>5. Mechanics of Composites<br>6. MOOCs (NPTEL/ Swayam) Course (12 Week duration) | 3 | 0 | 0 | 3 |
| 6 | PCC-L6 | Machine Tools Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC-L7 | Thermal Engineering Lab | 0 | 0 | 3 | 1.5 |
| 8 | SOC-3 | Advanced Communication Skills Lab | 1 | 0 | 2 | 2 |
| 9 | MC – 4 | Professional Ethics and Human Values | 2 | 0 | 0 | 0 |
| Evaluation of Summer Internship which is completed at the end of II B.Tech II Semester | | | | | | 1.5 |
| | | | **Total credits** | | | **21.5** |
| Honors/Minor courses | | | **4** | **0** | **0** | **4** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF MECHANICAL ENGINEERING

### III B.TECH II SEMESTER

| S.No | Code | Course Title | Hours | | | Credits |
|---|---|---|---|---|---|---|
| | | | L | T | P | |
| 1 | PCC-10 | Heat Transfer | 3 | 0 | 0 | 3 |
| 2 | PCC-11 | Design of Machine Members-II | 3 | 0 | 0 | 3 |
| 3 | PCC-12 | Introduction to Artificial Intelligence and Machine Learning | 3 | 0 | 0 | 3 |
| 4 | PE-2 | 1.Automobile Engineering<br>2.Smart Manufacturing<br>3.Advanced Mechanics of Solids<br>4.Statistical Quality Control<br>5.Industrial Hydraulics and Pneumatics<br>6.MOOCs (NPTEL/ Swayam) Course (12 Week duration) | 3 | 0 | 0 | 3 |
| 5 | OE-2 | 1.Industrial Robotics<br>2.Essentials of Mechanical Engineering<br>3.Advanced Materials<br>4.Introduction to Automobile Engineering | 3 | 0 | 0 | 3 |
| 6 | PCC-L8 | Heat Transfer Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC-L9 | CAE&CAM Lab | 0 | 0 | 3 | 1.5 |
| 8 | PCC-L10 | Measurements & Metrology Lab | 0 | 0 | 3 | 1.5 |
| 9 | SOC-4 | Artificial Intelligence and Machine Learning Lab | 0 | 0 | 4 | 2 |
| 10 | MC - 5 | Research Methodology and IPR | 2 | 0 | 0 | 0 |
| | | | | | **Total credits** | **21.5** |
| | | Honors/Minor courses | 4 | 0 | 0 | 4 |

* At the end of III Year II Semester, students shall complete summer internship spanning between 1 to 2 months at Industries/ Higher Learning Institutions/ APSSDC.

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
## DEPARTMENT OF MECHANICAL ENGINEERING

### IV B.TECH I SEMESTER

| S.No | Code | Course Title | Hours | | | Credits |
|---|---|---|---|---|---|---|
| | | | L | T | P | |
| 1 | PE-3 | 1. Mechanical Vibrations<br>2. Operations Research<br>3. Unconventional Machining Processes<br>4. Computational Fluid Dynamics<br>5. Gas Dynamics and Jet Propulsion<br>6. MOOCs (NPTEL/Swayam) Course (12 Week duration) | 3 | 0 | 0 | 3 |
| 2 | PE-4 | 1. Automation in Manufacturing<br>2. Power Plant Engineering<br>3. Big Data Analytics<br>4. Production Planning and Control<br>5.Condition Monitoring<br>6.MOOCs (NPTEL/Swayam) Course (12 Week duration) | 3 | 0 | 0 | 3 |
| 3 | PE-5 | 1. Advanced Manufacturing Processes<br>2. Mechatronics<br>3. Refrigeration & Air-Conditioning<br>4. Additive Manufacturing<br>5. Non Destructive Evaluation<br>6. MOOCs (NPTEL/Swayam) Course (12 Week duration) | 3 | 0 | 0 | 3 |
| 4 | OE-3 | 1. Additive Manufacturing<br>2. Mechatronics<br>3. Finite Element Methods<br>4. Introduction to Artificial Intelligence &Machine Learning | 3 | 0 | 0 | 3 |
| 5 | OE-4 | 1. Optimization Techniques<br>2. Smart Manufacturing<br>3. Safety Engineering<br>4. Operations Management | 3 | 0 | 0 | 3 |
| 6 | HSC-3 | Universal Human Values: Understanding Harmony | 3 | 0 | 0 | 3 |
| 7 | SOC-5 | Mechatronics Lab | 0 | 0 | 4 | 2 |
| Evaluation of Summer Internship which is completed at the end of III B.Tech II Semester | | | | | | 3 |
| | | | | | **Total credits** | **23** |
| Honors/Minor courses | | | 4 | 0 | 0 | 4 |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
## DEPARTMENT OF MECHANICAL ENGINEERING

### IV B.TECH II SEMESTER

| S No. | Category | Code | Course Title | Hours per week | | | Credits |
|---|---|---|---|---|---|---|---|
| | | | | L | T | P | |
| 1 | Major Project | PROJ | Project work* | 0 | 4 | 16 | 12 |
| | | | | | Total credits | | 12 |

*Students can complete Project work @ Industries/ Higher Learning Institutions/ APSSDC.

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY:: KAKINADA
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### I Year –I SEMESTER

| S.NO. | Category | Subjects | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | HS | Communicative English | 3 | 0 | 0 | 3 |
| 2 | BS | Mathematics –I( Calculus) | 3 | 0 | 0 | 3 |
| 3 | BS | Applied Chemistry | 3 | 0 | 0 | 3 |
| 4 | ES | Programming for Problem Solving Using C | 3 | 0 | 0 | 3 |
| 5 | BS | Engineering Drawing | 2 | 0 | 2 | 3 |
| 6 | LC | English Communication Skills Laboratory | 0 | 0 | 3 | 1.5 |
| 7 | LC | Applied Chemistry Lab | 0 | 0 | 3 | 1.5 |
| 8 | LC | Programming for Problem Solving Using C Lab | 0 | 0 | 3 | 1.5 |
| **Total Credits** | | | | | | **19.5** |

### I Year – II SEMESTER

| S.No. | Category | Subjects | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS | Mathematics –II<br>(Linear Algebra and Numerical Methods) | 3 | 0 | 0 | 3 |
| 2 | BS | Applied Physics | 3 | 0 | 0 | 3 |
| 3 | ES | Object Oriented Programming through Java | 2 | 0 | 2 | 3 |
| 4 | ES | Network Analysis | 3 | 0 | 0 | 3 |
| 5 | ES | Basic Electrical Engineering | 3 | 0 | 0 | 3 |
| 6 | LC | Electronic workshop Lab | 0 | 0 | 3 | 1.5 |
| 7 | LC | Basic Electrical Engineering Lab | 0 | 0 | 3 | 1.5 |
| 8 | LC | Applied Physics Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC | Environmental Science | 3 | 0 | 0 | 0.0 |
| **Total Credits** | | | | | | **19.5** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY:: KAKINADA
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### II Year –I Semester

| S.No. | Category | Name of the Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Electronic Devices and Circuits | 3 | 1 | 0 | 3 |
| 2 | PC | Switching Theory and Logic Design | 3 | 1 | 0 | 3 |
| 3 | PC | Signals and Systems | 3 | 1 | 0 | 3 |
| 4 | BS | Mathematics-III (Transforms and Vector Calculus) | 3 | 1 | 0 | 3 |
| 5 | BS | Random Variables and Stochastic Processes | 3 | 1 | 0 | 3 |
| 6 | LC | OOPS through Java Lab | 0 | 0 | 2 | 1.5 |
| 7 | LC | Electronic Devices and Circuits -Lab | 0 | 0 | 2 | 1.5 |
| 8 | LC | Switching Theory and Logic Design–Lab | 0 | 0 | 2 | 1.5 |
| 9 | SC | Python Programming | 0 | 0 | 4 | 2 |
| **Total Credits** | | | | | | **21.5** |

### II Year – II Semester

| S.No. | Category | Name of the subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Electronic Circuit Analysis | 3 | 1 | 0 | 3 |
| 2 | PC | Digital IC Design | 3 | 1 | 0 | 3 |
| 3 | PC | Analog Communications | 3 | 0 | 0 | 3 |
| 4 | ES | Linear control Systems | 3 | 1 | 0 | 3 |
| 5 | HS | Management and Organizational Behavior | 3 | 0 | 0 | 3 |
| 6 | LC | Electronic Circuit Analysis Lab | 0 | 0 | 3 | 1.5 |
| 7 | LC | Analog Communications Lab | 0 | 0 | 3 | 1.5 |
| 8 | LC | Digital IC Design Lab | 0 | 0 | 3 | 1.5 |
| 9 | SC | Soft Skills | 0 | 0 | 4 | 2 |
| 10 | MC | Constitution of India | 3 | 0 | 0 | 0 |
| **Total Credits** | | | | | | **21.5** |
| **Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)** | | | | | | **4** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY:: KAKINADA
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### III Year - I Semester

| S.No. | Category | Name of the subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Analog ICs and Applications | 3 | 0 | 0 | 3 |
| 2 | PC | Electromagnetic Waves and Transmission Lines | 3 | 0 | 0 | 3 |
| 3 | PC | Digital Communications | 3 | 0 | 0 | 3 |
| 4 | OE1 | Open Elective Course/Job oriented elective-1 | 2 | 0 | 2 | 3 |
| 5 | PE1 | Professional Elective courses -1 | 3 | 0 | 0 | 3 |
| 6 | LC | Analog ICs and Applications LAB | 0 | 0 | 3 | 1.5 |
| 7 | LC | Digital Communications Lab | 0 | 0 | 3 | 1.5 |
| 8 | SC | Data Structures using Java Lab | 0 | 0 | 4 | 2 |
| 9 | MC | Indian Traditional Knowledge | 2 | 0 | 0 | 0 |
| | **Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester** | | 0 | 0 | 0 | 1.5 |
| | | **Total credits** | | | | **21.5** |
| | **Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)** | | | | | **4** |

| **PE1:** | **OE1:** |
|---|---|
| 1. Antenna and Wave Propagation<br>2.Electronic Measurements and Instrumentation<br>3.Computer Architecture & Organization | Candidate should select the subject from list of subjects offered by other departments |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY:: KAKINADA
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### III Year –II Semester

| S.No. | Category | Name of the subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Microprocessor and Microcontrollers | 3 | 1 | 0 | 3 |
| 2 | PC | VLSI Design | 3 | 0 | 0 | 3 |
| 3 | PC | Digital Signal Processing | 3 | 0 | 0 | 3 |
| 4 | PE2 | Professional Elective courses - 2 | 3 | 0 | 0 | 3 |
| 5 | OE 2 | Open Elective Course/Job oriented elective -2 | 2 | 0 | 2 | 3 |
| 6 | LC | Microprocessor and Microcontrollers - Lab | 0 | 0 | 3 | 1.5 |
| 7 | LC | VLSI Design Lab | 0 | 0 | 3 | 1.5 |
| 8 | LC | Digital Signal Processing Lab | 0 | 0 | 3 | 1.5 |
| 9 | SC | ARM based/ Aurdino based Programming | 1 | 0 | 2 | 2 |
| 10 | MC | Research Methodology | 2 | 0 | 0 | 0 |
| | | | | | **Total credits** | **21.5** |
| | **Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)** | | | | | **4** |

**Industrial/Research Internship (Mandatory) 2 Months during summer vacation**

| **PE2:** | **OE2:** |
|---|---|
| 1.Microwave Engineering<br>2.Mobile & Cellular Communication<br>3.Embedded Systems<br>4.CMOS Analog IC Design | Candidate should select the subject from list of subjects offered by other departments |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY:: KAKINADA
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### IV Year –I Semester

| S.No. | Category | Name of the subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PE | Professional Elective courses -3 | 3 | 0 | 0 | 3 |
| 2 | PE | Professional Elective courses -4 | 3 | 0 | 0 | 3 |
| 3 | PE | Professional Elective courses -5 | 3 | 0 | 0 | 3 |
| 4 | OE | Open Elective Courses/ Job oriented elective -3 | 2 | 0 | 2 | 3 |
| 5 | OE | Open Elective Courses/ Job oriented elective -4 | 2 | 0 | 2 | 3 |
| 6 | HS | ***Humanities and Social Science Elective** | 3 | 0 | 0 | 3 |
| 7 | SC | **Designer tools (HFSS,** Microwave Studio CST. Cadence Virtuoso. Synopsys, Mentor Graphics, Xilinx.) | 1 | 0 | 2 | 2 |
| **Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester** | | | 0 | 0 | 0 | 3 |
| | | | | | **Total credits** | **23** |
| | **Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)** | | | | | **4** |

| | |
|---|---|
| PE 3:<br><br>1. Optical Communication<br>2. Digital Image Processing<br>3. Low Power VLSI Design | PE5:<br><br>1. Radar engineering<br>2.Pattern recognition & Machine Learning<br>3.Internet of Things |
| PE4:<br><br>1.Satellite Communications<br>2.Soft Computing Techniques<br>3.Digital IC Design using CMOS | |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY:: KAKINADA
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### IV Year – II Semester

| S. No. | Category | Code | Course Title | Hours per week | | | Credits |
|---|---|---|---|---|---|---|---|
| 1 | Major Project | PROJ | Project work, seminar and internship in industry | - | - | - | 12 |
| **INTERNSHIP (6 MONTHS)** | | | | | | | |
| **Total credits** | | | | | | | **12** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

# COURSE STRUCTURE

### I Year – I SEMESTER

| S. No | Course Code | Courses | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | HS | Communicative English | 3 | 0 | 0 | 3 |
| 2 | BS | Mathematics - I (Calculus And Differential Equations) | 3 | 0 | 0 | 3 |
| 3 | BS | Applied Physics | 3 | 0 | 0 | 3 |
| 4 | ES | Programming for Problem Solving using C | 3 | 0 | 0 | 3 |
| 5 | ES | Computer Engineering Workshop | 1 | 0 | 4 | 3 |
| 6 | HS | English Communication Skills Laboratory | 0 | 0 | 3 | 1.5 |
| 7 | BS | Applied Physics Lab | 0 | 0 | 3 | 1.5 |
| 8 | ES | Programming for Problem Solving using C Lab | 0 | 0 | 3 | 1.5 |
| **Total Credits** | | | **19.5** | | | |

### I Year – II SEMESTER

| S. No | Course Code | Courses | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS | Mathematics – II (Linear Algebra And Numerical Methods) | 3 | 0 | 0 | 3 |
| 2 | BS | Applied Chemistry | 3 | 0 | 0 | 3 |
| 3 | ES | Computer Organization | 3 | 0 | 0 | 3 |
| 4 | ES | Python Programming | 3 | 0 | 0 | 3 |
| 5 | ES | Data Structures | 3 | 0 | 0 | 3 |
| 6 | BS | Applied Chemistry Lab | 0 | 0 | 3 | 1.5 |
| 7 | ES | Python Programming Lab | 0 | 0 | 3 | 1.5 |
| 8 | ES | Data Structures Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC | Environment Science | 2 | 0 | 0 | 0 |
| **Total Credits** | | | **19.5** | | | |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

### II Year – I SEMESTER

| S. No | Course Code | Courses | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS | Mathematics III | 3 | 0 | 0 | 3 |
| 2 | CS | Object Oriented Programming through C++ | 3 | 0 | 0 | 3 |
| 3 | CS | Operating Systems | 3 | 0 | 0 | 3 |
| 4 | CS | Software Engineering | 3 | 0 | 0 | 3 |
| 5 | CS | Mathematical Foundations of Computer Science | 3 | 0 | 0 | 3 |
| 6 | CS | Object Oriented Programming through C++ Lab | 0 | 0 | 3 | 1.5 |
| 7 | CS | Operating Systems Lab | 0 | 0 | 3 | 1.5 |
| 8 | CS | Software Engineering Lab | 0 | 0 | 3 | 1.5 |
| 9 | SO | Skill oriented Course - I<br>1) Applications of Python - Num Py<br>2) Web Application Development Using FullStack - Frontend Development –Module -I | 0 | 0 | 4 | 2 |
| 10 | MC | Constitution of India | 2 | 0 | 0 | 0 |
| **Total Credits** | | | **21.5** | | | |

### II Year – II SEMESTER

| II Year – II SEMESTER | | | | | | |
|---|---|---|---|---|---|---|
| **S. No** | **Course Code** | **Courses** | **L** | **T** | **P** | **Credits** |
| 1 | BS | Probability and Statistics | 3 | 0 | 0 | 3 |
| 2 | CS | Database Management Systems | 3 | 0 | 0 | 3 |
| 3 | CS | Formal Languages and Automata Theory | 3 | 0 | 0 | 3 |
| 4 | ES | Java Programming | 3 | 0 | 0 | 3 |
| 5 | HS | Managerial Economics and Financial Accountancy | 3 | 0 | 0 | 3 |
| 6 | CS | Database Management Systems Lab | 0 | 0 | 2 | 1 |
| 7 | CS | R Programming Lab | 0 | 1 | 2 | 2 |
| 8 | ES | Java Programming Lab | 0 | 0 | 3 | 1.5 |
| 9 | SO | **Skill Oriented Course - II**<br>1) Applications of Python-Pandas **OR**<br>2) Web Application Development Using Full Stack -Frontend Development –Module-II | 0 | 0 | 4 | 2 |
| **Total Credits** | | | **21.5** | | | |
| 10 | Minor | Operating Systems$ | 3 | 0 | 2 | 4 |
| 11 | Honors | Any course from the Pool, as per the opted track | 4 | 0 | 0 | 4 |

$- Integrated Course

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

| III B. Tech – I Semester | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **Course Code** | **Courses** | **Hours per week** | | | **Credits** |
| | | | **L** | **T** | **P** | **C** |
| 1 | PC | Computer Networks | **3** | **0** | **0** | **3** |
| 2 | PC | Design and Analysis of Algorithms | **3** | **0** | **0** | **3** |
| 3 | PC | Data Warehousing and Data Mining | **3** | **0** | **0** | **3** |
| 4 | Open Elective/Job Oriented | **Open Elective-I**<br>Open Electives offered by other departments/Optimization in Operations Research (Job oriented course) | **3** | **0** | **0** | **3** |
| 5 | PE | **Professional Elective-I**<br>1. Artificial Intelligence<br>2. Software Project Management<br>3. Distributed Systems<br>4. Advanced Unix Programming | **3** | **0** | **0** | **3** |
| 6 | PC | Data Warehousing and Data Mining Lab | **0** | **0** | **3** | **1.5** |
| 7 | PC | Computer Networks Lab | **0** | **0** | **3** | **1.5** |
| 8 | SO | **Skill Oriented Course - III**<br>1. Animation course: Animation Design<br>2.Continuous Integration and Continuous Delivery using Dev Ops | **0** | **0** | **4** | **2** |
| 9 | MC | Employability Skills-I | **2** | **0** | **0** | **0** |
| 10 | PR | **Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester** | **0** | **0** | **0** | **1.5** |
| **Total credits** | | | | | | **21.5** |
| 11 | Minor | Database Management Systems$ | 3 | 0 | 2 | 4 |
| 12 | Honors | Any course from the Pool, as per the opted track | 4 | 0 | 0 | 4 |

$- Integrated Course

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

| III B. Tech – II Semester | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **CourseCode** | **Courses** | **Hours per week** | | | **Credits** |
| | | | **L** | **T** | **P** | **C** |
| 1 | PC | Machine Learning | **3** | **0** | **0** | **3** |
| 2 | PC | Compiler Design | **3** | **0** | **0** | **3** |
| 3 | PC | Cryptography and Network Security | **3** | **0** | **0** | **3** |
| 4 | PE | **Professional Elective-II**<br>1.Mobile Computing<br>2.Big Data Analytics<br>3.Object Oriented Analysis and Design<br>4.Network Programming | **3** | **0** | **0** | **3** |
| 5 | Open Elective /Job Oriented | **Open Elective-II**<br>Open Electives offered by other departments/<br>MEAN Stack Development (Job Oriented Course) | **3** | **0** | **0** | **3** |
| 6 | PC | Machine Learning using Python Lab | **0** | **0** | **3** | **1.5** |
| 7 | PC | Compiler Design Lab | **0** | **0** | **3** | **1.5** |
| 8 | PC | Cryptography and Network Security Lab | **0** | **0** | **3** | **1.5** |
| 9 | SO | **Skill Oriented Course - IV**<br>1.Big Data:Spark<br>2.MEAN Stack Technologies-Module I- MongoDB, Express.js, Angular JS Node.js and AJAX | **0** | **0** | **4** | **2** |
| 10 | MC | Employability skills-II | **2** | **0** | **0** | **0** |
| **Total credits** | | | | | | **21.5** |
| **Industrial/Research Internship(Mandatory) 2 Months during summer vacation** | | | | | | |
| 11 | Minor | Data Structures and Algorithms$ | 3 | 0 | 2 | 4 |
| 12 | Honors | Any course from the Pool, as per the opted track | 4 | 0 | 0 | 4 |
| **Minor course through SWAYAM** | | | - | - | - | **2** |

$- Integrated Course

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

**IV B. Tech –I Semester**

| S.No | Course Code | Course Title | Hoursperweek | | | Credits |
|---|---|---|---|---|---|---|
| | | | L | T | P | C |
| 1 | PE | **Professional Elective-III**<br>1.Cloud Computing<br>2.Neural Networks and Soft Computing<br>3.Ad-hoc and Sensor Networks<br>4.Cyber Security & Forensics | 3 | 0 | 0 | 3 |
| 2 | PE | **Professional Elective-IV**<br>1. Deep Learning Techniques<br>2. Social Networks & Semantic Web<br>3. Computer Vision<br>4.MOOCS-NPTEL/SWAYAM | 3 | 0 | 0 | 3 |
| 3 | PE | **Professional Elective-V**<br>1.Block-Chain Technologies<br>2.Wireless Network Security<br>3.Ethical Hacking<br>4.MOOCS-NPTEL/SWAYAM | 3 | 0 | 0 | 3 |
| 4 | Open Elective /Job Oriented | **Open Elective-III**<br>Open Electives offered by other departments/<br>API and Microservices (Job Oriented Course) | 3 | 0 | 0 | 3 |
| 5 | Open Elective /Job Oriented | **Open Elective-IV**<br>Open Electives offered by other departments/<br>Secure Coding Techniques (Job Oriented Course) | 3 | 0 | 0 | 3 |
| 6 | HS | Universal Human Values 2: Understanding Harmony | 3 | 0 | 0 | 3 |
| 7 | SO | 1.PYTHON: Deep Learning /APSSDC offered Courses<br>2.MEAN Stack Technologies-Module II-MongoDB, Express.js, Angular JS Node.js, and AJAX | 0 | 0 | 4 | 2 |
| 8 | PR | **Industrial/Research Internship 2 months (Mandatory) after third year (to be evaluated during VII semester** | 0 | 0 | 0 | 3 |
| **Total credits** | | | | | | **23** |
| 9 | Minor | Software Engineering$ / any other from PART-B (For Minor) | 3 | 0 | 2 | 4 |
| 10 | Honors | Any course from the Pool, as per the opted track | 4 | 0 | 0 | 4 |
| | | **Minor course through SWAYAM** | - | - | - | **2** |

$- Integrated Course

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

| IV B. Tech –II Semester | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **Course Code** | **Course Title** | **Hours per week** | | | **Credits** |
| | | | **L** | **T** | **P** | **C** |
| 1 | Project | Major Project Work, Seminar Internship | - | - | - | **12** |
| | | | | | **Total credits** | **12** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

KAKINADA 533 003, Andhra Pradesh, India

## DEPARTMENT OF AGRICULTURAL ENGINEERING

## COURSE STRUCTURE

**I Year - I Semester**

| S. No. | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS1101 | Mathematics I (Calculus & Differential Equations) | 3 | 0 | 0 | 3 |
| 2 | BS1102 | Principles of Soil Science and Agronomy | 3 | 0 | 0 | 3 |
| 3 | HS1101 | English | 3 | 0 | 0 | 3 |
| 4 | ES1103 | Engineering Workshop and IT Workshop | 1 | 0 | 4 | 3 |
| 5 | BS1108 | Engineering Physics | 3 | 0 | 0 | 3 |
| 6 | HS1102 | English and Communication Skills Lab | 0 | 0 | 3 | 1.5 |
| 7 | BS1102 | Soil Science and Agronomy Field Lab | 0 | 0 | 3 | 1.5 |
| 8 | BS1109 | Engineering Physics Laboratory | 0 | 0 | 3 | 1.5 |
| | | **Total Credits** | | | | **19.5** |

**I Year – II Semester**

| S. No. | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS1201 | Mathematics II (Linear Algebra & Numerical Methods) | 3 | 0 | 0 | 3 |
| 2 | BS1210 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 3 | ES1204 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 4 | ES1201 | Programming for Problem Solving Using C | 3 | 0 | 0 | 3 |
| 5 | ES1103 | Engineering Drawing | 3 | 0 | 0 | 3 |
| 6 | ES1202 | Programming for Problem Solving Using C Lab | 0 | 0 | 3 | 1.5 |
| 7 | BS1211 | Engineering Chemistry Laboratory | 0 | 0 | 3 | 1.5 |
| 8 | ES1220 | Machine Drawing and Computer Graphics | 0 | 0 | 3 | 1.5 |
| 9 | MC1201 | Environmental Science | 2 | 0 | 0 | 0 |
| | | **Total Credits** | | | | **19.5** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

KAKINADA 533 003, Andhra Pradesh, India

## DEPARTMENT OF AGRICULTURAL ENGINEERING

**II Year- I Semester**

| S. No | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS | Mathematics III (Vector Calculus, Transforms and PDE) | 3 | 0 | 0 | 3 |
| 2 | PC | Surveying and Leveling | 3 | 0 | 0 | 3 |
| 3 | ES | Fluid Mechanics and Open Channel Hydraulics | 3 | 0 | 0 | 3 |
| 4 | ES | Properties and Strength of Materials | 3 | 0 | 0 | 3 |
| 5 | PC | Farm Power and Tractor Systems | 3 | 0 | 0 | 3 |
| 6 | PC | Surveying and Leveling Lab | 0 | 0 | 3 | 1.5 |
| 7 | ES | Fluid Mechanics and Open Channel Hydraulics Lab | 0 | 0 | 3 | 1.5 |
| 8 | PC | Field Operation and Maintenance of Tractors Lab | 0 | 0 | 3 | 1.5 |
| 9 | SOC | Agricultural Machinery Design using CAD/CAM Skill Oriented Course (Lab) | 1 | 0 | 2 | 2 |
| 10 | MC | Constitution of India | | | | 0 |
| | | **Total Credits** | | | | **21.5** |

**II Year- II Semester**

| S. No | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Heat and Mass Transfer | 3 | 0 | 0 | 3 |
| 2 | PC | Ground Water Hydrology, Wells and Pumps | 3 | 0 | 0 | 3 |
| 3 | PC | Theory of Structures | 3 | 0 | 0 | 3 |
| 4 | PC | Soil Mechanics | 3 | 0 | 0 | 3 |
| 5 | HSS | Managerial Economics and Financial Analysis | 3 | 0 | 0 | 3 |
| 6 | PC | Heat and Mass Transfer Lab | 0 | 0 | 3 | 1.5 |
| 7 | PC | Theory of Structures Lab | 0 | 0 | 3 | 1.5 |
| 8 | PC | Soil Mechanics Lab | 0 | 0 | 3 | 1.5 |
| 9 | SOC | Analysis/Simulation using MATLAB Skill Oriented Course (Lab) | 1 | 0 | 2 | 2 |
| 10 | | Industrial/Research Internship (Mandatory) 2 Months… to be evaluated in III year I semester | | | | |
| | | **Total Credits** | | | | **21.5** |
| | | **Honors (Pool-1)/Minor Courses** | 3 | 1 | 0 | **4** |

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

KAKINADA 533 003, Andhra Pradesh, India

## DEPARTMENT OF AGRICULTURAL ENGINEERING

**III Year - I Semester**

| S. No | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Farm Machinery and Equipment - I | 3 | 0 | 0 | 3 |
| 2 | PC | Surface Water Hydrology | 3 | 0 | 0 | 3 |
| 3 | PC | Post Harvest Engineering of Cereals, Pulses and Oilseeds | 3 | 0 | 0 | 3 |
| 4 | OE | **Open Elective - I** | 3 | 0 | 0 | 3 |
| 5 | PE | **Professional Elective- I**<br>1. Seed Processing and Storage Engineering<br>2. Greenhouse Technology<br>3. Tractor Design and Testing | 3 | 0 | 0 | 3 |
| 6 | PC | Theory of Machines Lab | 0 | 0 | 3 | 1.5 |
| 7 | PC | Electrical Circuits Lab | 0 | 0 | 3 | 1.5 |
| 8 | SOC | Soft Skills | 1 | 0 | 2 | 2 |
| 9 | MC | Professional Ethics and Human Values | 2 | 0 | 0 | 0 |
| 10 | PR | Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester) | | | | 1.5 |
| | | **Total Credits** | | | | **21.5** |
| | | **Honors (Pool-2)/Minor Courses** | 3 | 1 | 0 | **4** |

**III Year - II Semester**

| S. No | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PC | Soil and Water Conservation Engineering | 3 | 0 | 0 | 3 |
| 2 | PC | Farm Machinery and Equipment - II | 3 | 0 | 0 | 3 |
| 3 | PC | Agricultural Process Engineering | 3 | 0 | 0 | 3 |
| 4 | PE | **Professional Elective II**<br>1. Food Packaging Technology<br>2. Watershed Management<br>3. Human Engineering and Safety | 3 | 0 | 0 | 3 |
| 5 | OE | **Open Elective - II** | 3 | 0 | 0 | 3 |
| 6 | PC | Soil and Water Conservation Engineering Lab | 0 | 0 | 3 | 1.5 |
| 7 | PC | Farm Machinery and Equipment Lab | 0 | 0 | 3 | 1.5 |
| 8 | PC | Agricultural Process Engineering Lab | 0 | 0 | 3 | 1.5 |
| 9 | SOC | Structural Design with ANSYS | 1 | 0 | 2 | 2 |
| 10 | MC | Employability Skills | 2 | 0 | 0 | 0 |
| 11 | Industrial/Research Internship (Mandatory) 2 Months… to be evaluated in IV year I semester | | | | | |
| | | **Total Credits** | | | | **21.5** |
| | | **Honors (Pool-3)/Minor Courses** | 3 | 1 | 0 | **4** |

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

**DEPARTMENT OF AGRICULTURAL ENGINEERING**

**IV Year – I Semester**

| S. No | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PE | **Professional Elective III**<br>1. Irrigation and Drainage Engineering<br>2. Production Technology of Agricultural Machinery<br>3. Food Plant Design and Management | 3 | 0 | 0 | 3 |
| 2 | PE | **Professional Elective IV**<br>1. Design of Soil and Water Conservation andFarm Systems<br>2. Food Process Equipment Design<br>3. Design of Agricultural Machinery | 3 | 0 | 0 | 3 |
| 3 | PE | **Professional Elective -V**<br>1. Micro Irrigation Engineering<br>2. Mechatronics in Agricultural Engineering<br>3. Dairy and Food Engineering | 3 | 0 | 0 | 3 |
| 4 | OE | **Open Elective III** | 3 | 0 | 0 | 3 |
| 5 | OE | **Open Elective - IV** | 3 | 0 | 0 | 3 |
| 6 | HSS | Universal Human Values: 2 Understanding Harmony | 3 | 0 | 0 | 3 |
| 7 | SOC | Computational Fluid Dynamics with FLUENT | 1 | 0 | 2 | 2 |
| 8 | PR | Industrial/Research Internship 2 Months (Mandatory)after third year (to be evaluated during VII semester | | | | 3 |
| | | **Total Credits** | | | | **23.0** |
| | | **Honors (Pool-4)/Minor Courses** | 3 | 1 | 0 | 4 |

**IV Year – II Semester**

| S. No | Course Code | Subject | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | PR | Major Project | 0 | 0 | 0 | 12 |
| | | **Total Credits** | | | | **12.0** |

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

# DEPARTMENT OF CSE - ARTIFICIAL INTELLIGENCE

## COURSE STRUCTURE

### I Year – I SEMESTER

| S. No | Course Code | Subjects | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | HS1101 | Communicative English | 3 | 0 | 0 | 3 |
| 2 | BS1101 | Mathematics – I | 3 | 0 | 0 | 3 |
| 3 | BS1102 | Applied Chemistry | 3 | 0 | 0 | 3 |
| 4 | ES1101 | Programming for Problem Solving using C | 3 | 0 | 0 | 3 |
| 5 | ES1102 | Computer Engineering Workshop | 1 | 0 | 4 | 3 |
| 6 | HS1102 | English Communication Skills Laboratory | 0 | 0 | 3 | 1.5 |
| 7 | BS1103 | Applied Chemistry Lab | 0 | 0 | 3 | 1.5 |
| 8 | ES1103 | Programming for Problem Solving using C Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC1101 | Environmental Science* | 2 | 0 | 0 | 0 |
| **Total Credits** | | | **15** | **0** | **13** | **19.5** |

### I Year – II SEMESTER

| S. No | Course Code | Subjects | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS1201 | Mathematics – II | 3 | 0 | 0 | 3 |
| 2 | BS1202 | Applied Physics | 3 | 0 | 0 | 3 |
| 3 | ES1201 | Digital Logic Design | 3 | 0 | 0 | 3 |
| 4 | ES1202 | Python Programming | 3 | 0 | 0 | 3 |
| 5 | CS1201 | Data Structures | 3 | 0 | 0 | 3 |
| 6 | BS1203 | Applied Physics Lab | 0 | 0 | 3 | 1.5 |
| 7 | ES1203 | Python Programming Lab | 0 | 0 | 3 | 1.5 |
| 8 | CS1202 | Data Structures Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC1201 | Constitution of India * | 2 | 0 | 0 | 0 |
| **Total Credits** | | | **17** | **0** | **9** | **19.5** |

*Internal Evaluation

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

# DEPARTMENT OF CSE - ARTIFICIAL INTELLIGENCE

## II Year – I SEMESTER

| S. No | Course Code | Courses | L | T | P | Credits |
|---|---|---|---|---|---|---|
| 1 | BS | Mathematics III | 3 | 0 | 0 | 3 |
| 2 | CS | Mathematical Foundations of Computer Science | 3 | 0 | 0 | 3 |
| 3 | CS | Introduction to Artificial Intelligence | 3 | 0 | 0 | 3 |
| 4 | CS | Object Oriented Programming with Java | 3 | 0 | 0 | 3 |
| 5 | CS | Database Management Systems | 3 | 0 | 0 | 3 |
| 6 | CS | Introduction to Artificial Intelligence Lab | 0 | 0 | 3 | 1.5 |
| 7 | CS | Object Oriented Programming with Java Lab | 0 | 0 | 3 | 1.5 |
| 8 | CS | Database Management Systems Lab | 0 | 0 | 3 | 1.5 |
| 9 | SO | Mobile App Development | 0 | 0 | 4 | 2 |
| 10 | MC | Essence of Indian Traditional Knowledge | 2 | 0 | 0 | 0 |
| **Total Credits** | | | **17** | **0** | **13** | **21.5** |

## II Year – II SEMESTER

| II Year – II SEMESTER | | | | | | |
|---|---|---|---|---|---|---|
| **S. No** | **Course Code** | **Courses** | **L** | **T** | **P** | **Credits** |
| 1 | BS | Probability and Statistics | 3 | 0 | 0 | 3 |
| 2 | CS | Computer Organization | 3 | 0 | 0 | 3 |
| 3 | CS | Data Warehousing and Mining | 3 | 0 | 0 | 3 |
| 4 | ES | Formal Languages and Automata Theory | 3 | 0 | 0 | 3 |
| 5 | HS | Managerial Economics and Financial Accountancy | 3 | 0 | 0 | 3 |
| 6 | CS | R Programming Lab | 0 | 0 | 3 | 1.5 |
| 7 | CS | Data Mining using Python Lab | 0 | 0 | 3 | 1.5 |
| 8 | ES | Web Application Development Lab | 0 | 0 | 3 | 1.5 |
| 9 | SO | Natural Language Processing with Python | 0 | 0 | 4 | 2 |
| **Total Credits** | | | | | | **21.5** |
| 10 | Minor | Introduction to Artificial Intelligence[$] | **3** | **0** | **2** | **4** |

$- Integrated Course

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

# DEPARTMENT OF CSE - ARTIFICIAL INTELLIGENCE

| III B. Tech – I Semester | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **Course Code** | **Courses** | **Hours per week** | | | **Credits** |
| | | | **L** | **T** | **P** | **C** |
| 1 | PC | Compiler Design | **3** | **0** | **0** | **3** |
| 2 | PC | Operating Systems | **3** | **0** | **0** | **3** |
| 3 | PC | Machine Learning | **3** | **0** | **0** | **3** |
| 4 | Open Elective/Job Oriented | **Open Elective-I**<br>Open Electives offered by other departments/<br>Optimization in Operations Research(Job oriented course) | **3** | **0** | **0** | **3** |
| 5 | PE | **Professional Elective-I**<br>1. Software Engineering<br>2. Computer Vision<br>3. Data Visualization<br>4.DevOps | **3** | **0** | **0** | **3** |
| 6 | PC | Operating Systems & Compiler Design Lab | **0** | **0** | **3** | **1.5** |
| 7 | PC | Machine Learning Lab | **0** | **0** | **3** | **1.5** |
| 8 | SO | **Skill Oriented Course - III**<br>Continuous Integration and Continuous Delivery using DevOps | **0** | **0** | **4** | **2** |
| 9 | MC | Employability Skills-I | **2** | **0** | **0** | **0** |
| 10 | PR | **Summer Internship 2 Months(Mandatory) after second year(to be evaluated during V semester** | **0** | **0** | **0** | **1.5** |
| **Total credits** | | | | | | **21.5** |
| 11 | Minor | Machine Learning$ | **3** | **0** | **2** | **4** |

$- Integrated Course

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

# DEPARTMENT OF CSE - ARTIFICIAL INTELLIGENCE

**III B. Tech – II Semester**

| S.No | Course Code | Courses | Hours per week | | | Credits |
|---|---|---|---|---|---|---|
| | | | L | T | P | C |
| 1 | PC | Computer Networks | 3 | 0 | 0 | 3 |
| 2 | PC | Deep Learning | 3 | 0 | 0 | 3 |
| 3 | PC | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 |
| 4 | PE | **Professional Elective-II**<br>1. Software Project Management<br>2. Distributed Systems<br>3. Internet of Things<br>4. Network Programming<br>5. Expert Systems | 3 | 0 | 0 | 3 |
| 5 | Open Elective/Job Oriented | **Open Elective-II**<br>Open Electives offered by other departments/<br>MEAN Stack Development (Job Oriented Course) | 3 | 0 | 0 | 3 |
| 6 | PC | Computer Networks Lab | 0 | 0 | 3 | 1.5 |
| 7 | PC | Algorithms for Efficient Coding Lab | 0 | 0 | 3 | 1.5 |
| 8 | PC | Deep Learning with Tensorflow | 0 | 0 | 3 | 1.5 |
| 9 | SO | **Skill Oriented Course - IV**<br>1. MEAN Stack Technologies-Module I- MongoDB, Express.js, Angular JS Node.js and AJAX<br>2. Big Data : Apache Spark | 0 | 0 | 4 | 2 |
| 10 | MC | Employability skills-II | 2 | 0 | 0 | 0 |
| **Total credits** | | | | | | 21.5 |
| **Industrial/Research Internship(Mandatory) 2 Months during summer vacation** | | | | | | |
| 11 | Minor | Deep Learning$ | 3 | 0 | 2 | 4 |
| **Minor courses through SWAYAM** | | | 0 | 0 | 0 | 2 |

$- Integrated Course

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
## KAKINADA – 533 003, Andhra Pradesh, India

# DEPARTMENT OF CSE - ARTIFICIAL INTELLIGENCE

**IV B. Tech –I Semester (Tentative)**

| S.No | Course Code | Course Title | Hoursperweek | | | Credits |
|---|---|---|---|---|---|---|
| | | | L | T | P | C |
| 1 | PE | **Professional Elective-III**<br>1.Reinforcement Learning<br>2.Soft Computing<br>3. Cryptography and Network Security<br>4. Block Chain Technologies<br>5. Speech Processing | 3 | 0 | 0 | 3 |
| 2 | PE | **Professional Elective-IV**<br>1. Robotic Process Automation<br>2. Cloud Computing<br>3. Big Data Analytics<br>4. NOSQL Databases<br>5. Video Analytics | 3 | 0 | 0 | 3 |
| 3 | PE | **Professional Elective-V**<br>1. Social Network Analysis<br>2. Recommender Systems<br>3. AI Chatbots<br>4. Object Oriented Analysis and Design<br>5. Semantic Web | 3 | 0 | 0 | 3 |
| 4 | Open Elective /Job Oriented | **Open Elective-III**<br>Open Electives offered by other departments/API and Microservices (Job Oriented Course) | 3 | 0 | 0 | 3 |
| 5 | Open Elective /Job Oriented | **Open Elective-IV**<br>Open Electives offered by other departments/Secure Coding Techniques (Job Oriented Course) | 3 | 0 | 0 | 3 |
| 6 | HS | Universal Human Values 2: Understanding Harmony | 3 | 0 | 0 | 3 |
| 7 | SO | 1.Machine Learning with Go (Infosys Spring Board)<br>2.MEAN Stack Technologies-Module II-MongoDB, Express.js, Angular JS Node.js, and AJAX | 0 | 0 | 4 | 2 |
| 8 | PR | **Industrial/Research Internship 2 months (Mandatory) after third year (to be evaluated during VII semester** | 0 | 0 | 0 | 3 |
| **Total credits** | | | | | | 23 |
| 9 | Minor | Reinforcement Learning | 4 | 0 | 0 | 4 |
| **Minor courses through SWAYAM** | | | 0 | 0 | 0 | 2 |