



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

DEPARTMENT OF CIVIL ENGINEERING

III YEAR: I- SEMESTER

| Sl. No. | Course Code | Course Title | L | T | P | Credits |
|---------|-------------|---------------------------------|---|---|---|-----------|
| 1 | PC501 | Structural Analysis | 3 | 0 | 0 | 3 |
| 2 | PC502 | Concrete Technology | 2 | 0 | 0 | 2 |
| 3 | PC503 | Water Resources Engineering - I | 3 | 0 | 0 | 3 |
| 4 | PC504 | Environmental Engineering - II | 3 | 0 | 0 | 3 |
| 5 | PE501 | Program Elective – I | 3 | 0 | 0 | 3 |
| 6 | OE501 | Open Elective – I | 3 | 0 | 0 | 3 |
| 7 | PC506 | Concrete Technology Lab | 0 | 0 | 3 | 1.5 |
| 8 | PC507 | Surveying Field Work - II | 0 | 0 | 3 | 1.5 |
| | | Total Credits | | | | 20 |

III YEAR: II- SEMESTER

| Sl. No. | Course Code | Course Title | L | T | P | Credits |
|---------|-------------|--|---|---|---|-----------|
| 1 | PC601 | Design & Drawing of Reinforced Concrete Structures | 3 | 0 | 0 | 3 |
| 2 | PC602 | Water Resources Engineering – II | 3 | 0 | 0 | 3 |
| 3 | PC603 | Geotechnical Engineering - I | 3 | 0 | 0 | 3 |
| 4 | HS601 | Managerial Economics & Financial Analysis | 3 | 0 | 0 | 3 |
| 5 | PE601 | Program Elective – II | 3 | 0 | 0 | 3 |
| 6 | OE601 | Open Elective – II | 3 | 0 | 0 | 3 |
| 7 | PC604 | CAD Lab | 0 | 0 | 3 | 1.5 |
| 8 | PC605 | Environmental Engineering Lab | 0 | 0 | 3 | 1.5 |
| 9 | PR601 | Socially Relevant Project | 0 | 0 | 2 | 1 |
| 10 | MC601 | Employability Skills | 0 | 0 | 2 | 0 |
| | | Total Credits | | | | 22 |

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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF CIVIL ENGINEERING

| Open Electives | Professional Elective-I | Professional Elective-II | Professional Elective-III | Professional Elective-IV | Professional Elective-V |
|--------------------------------------|---|------------------------------------|---------------------------------------|---|---|
| a) Disaster Management | a) Repair & Rehabilitation of Buildings | a) Pre-stressed Concrete | a) Bridge Engineering | a) Finite Element Methods | a) Advanced Structural Analysis |
| b) Environmental Pollution & Control | b) Environmental Impact Assessment | b) Watershed Management | b) Industrial Waste Water Treatment | b) Design & Drawing of Irrigation Structures | b) Urban Hydrology |
| c) Elements of Civil Engineering | c) Reinforced Soil Structures | c) Advanced Foundation Engineering | c) Earth & Rock-fill Dams | c) Soil Dynamics and Machine Foundations | c) Ground Improvement Techniques |
| d) Green Technology | d) Traffic Engineering | d) Urban Transportation Planning | d) Intelligent Transportation Systems | d) Road Safety Engineering | d) Pavement Management Systems |
| e) Smart Cities | e) Construction Technology & Management | e) Architecture Town Planning | e) Building Services | e) Disaster Management & Mitigation | e) Low-cost Housing |
| f) Project Management | | | | f) SWAYAM / NPTEL / MOOCS COURSES (12 weeks duration) | f) SWAYAM / NPTEL / MOOCS COURSES (12 weeks duration) |
| g) Traffic Safety | | | | | |
| h) Geo-Spatial Technologies | | | | | |
| i) Waste Water Treatment | | | | | |

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IV Year - I Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Environmental Engineering - II | 4 | -- | -- | 3 |
| 2 | Water Resource Engineering - II | 4 | -- | -- | 3 |
| 3 | Geotechnical Engineering - II | 4 | -- | -- | 3 |
| 4 | Remote Sensing & GIS Applications | 4 | -- | -- | 3 |
| 5 | Elective I i. Finite Element Methods ii. Ground Improvement Techniques iii. Air Pollution & Control iv. Urban Hydrology v. Traffic Engineering | 4 | -- | -- | 3 |
| 6 | Elective II i. Advanced Structural Engineering ii. Advanced Foundation Engineering iii. Environmental Impact Assessment & Management iv. Ground Water Development v. Pavement Analysis and Design | 4 | -- | -- | 3 |
| 7 | IPR & Patents | -- | 2 | -- | -- |
| 8 | GIS & CAD Lab | -- | -- | 2 | 2 |
| 9 | Irrigation Design & Drawing | -- | -- | 2 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Estimation Specification & Contracts | 4 | -- | -- | 3 |
| 2 | Construction Technology & Management | 4 | -- | -- | 3 |
| 3 | Prestressed Concrete | 4 | -- | -- | 3 |
| 4 | Elective III i. Bridge Engineering ii. Soil Dynamics and Foundations iii. Solid and Hazardous Waste Management iv. Water Resources Systems Planning v. Urban Transportation Planning Engg | 4 | -- | -- | 3 |
| 5 | Seminar on Internship Project | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |

Total Course Credits = 48+44 + 42 + 46 = 180


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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA-533003, Andhra Pradesh, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

II B.Tech – I Semester

| Sl. No | Course Components | Subjects | L | T | P | Credits |
|----------------------|-------------------|--|-------------|---|---|---------|
| 1 | BSC | Mathematics– IV | 3 | 0 | 0 | 3 |
| 2 | PCC | Electronic Devices and Circuits | 3 | 0 | 0 | 3 |
| 3 | PCC | Electrical Circuit Analysis –II | 3 | 0 | 0 | 3 |
| 4 | PCC | DC Machines and Transformers | 3 | 0 | 0 | 3 |
| 5 | PCC | Electro Magnetic Fields | 3 | 0 | 0 | 3 |
| 6 | PCC | Electrical Circuits Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC | DC Machines and Transformers Lab | 0 | 0 | 3 | 1.5 |
| 8 | PCC | Electronic Devices and Circuits lab | 0 | 0 | 3 | 1.5 |
| 9 | SC | Skill oriented course - Design of Electrical Circuits using Engineering Software Tools | 0 | 0 | 4 | 2 |
| 10 | MC | Professional Ethics & Human Values | 2 | 0 | 0 | 0 |
| Total Credits | | | 21.5 | | | |

II B.Tech – II Semester

| Sl. No | Course Components | Subjects | L | T | P | Credits |
|----------------------|-------------------|--|-------------|---|---|---------|
| 1 | ESC | Python Programming | 3 | 0 | 0 | 3 |
| 2 | PCC | Digital Electronics | 3 | 0 | 0 | 3 |
| 3 | PCC | Power System-I | 3 | 0 | 0 | 3 |
| 4 | PCC | Induction and Synchronous Machines | 3 | 0 | 0 | 3 |
| 5 | HSMC | Managerial Economics & Financial Analysis | 3 | 0 | 0 | 3 |
| 6 | ESC | Python Programming Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC | Induction and Synchronous Machines Lab | 0 | 0 | 3 | 1.5 |
| 8 | PCC | Digital Electronics Lab | 0 | 0 | 3 | 1.5 |
| 9 | SC | Skill oriented course- IoT Applications of Electrical Engineering Lab | 0 | 0 | 4 | 2 |
| Total Credits | | | 21.5 | | | |
| | | Minors Course* | 4 | 0 | 0 | 4 |
| | | Honors Course* | 4 | 0 | 0 | 4 |

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

III Year – I SEMESTER

| S. No | Course Code | Subjects | Category | L | T | P | Credits |
|----------------------|-------------|--|----------|-----------|----------|----------|-----------|
| 1 | | Power Systems-II | EE | 3 | -- | -- | 3 |
| 2 | | Power Electronics | EE | 3 | -- | -- | 3 |
| 3 | | Linear IC Applications | ES | 3 | -- | -- | 3 |
| 4 | | Digital Signal Processing | EE | 3 | -- | -- | 3 |
| 5 | | Microprocessors and Microcontrollers | EE | 3 | -- | -- | 3 |
| 6 | | Electrical Machines-II Laboratory | EE | -- | -- | 3 | 1.5 |
| 7 | | Control Systems Laboratory | EE | -- | -- | 2 | 1 |
| 8 | | Electrical Measurements & Instrumentation Laboratory | EE | -- | -- | 3 | 1.5 |
| 9 | | Socially Relevant Projects | MC | -- | -- | 1 | 1 |
| Total Credits | | | | 15 | 0 | 9 | 20 |

III Year – II SEMESTER

| S. No | Course Code | Subjects | Category | L | T | P | Credits |
|----------------------|-------------|---|----------|-----------|----|----------|-----------|
| 1 | | Electric Drives | EE | 3 | -- | -- | 3 |
| 2 | | Power System Analysis | EE | 3 | -- | -- | 3 |
| 3 | | Data Structures | ES | 3 | -- | -- | 3 |
| 4 | | Digital Control Systems | EE | 3 | -- | -- | 3 |
| 5 | | Elective - I | EL | 3 | -- | -- | 3 |
| 6 | | Open Elective - I | OE | 3 | -- | -- | 3 |
| 7 | | Power Electronics Laboratory | EE | -- | -- | 3 | 1.5 |
| 8 | | Microprocessors & Microcontrollers Laboratory | EE | -- | -- | 3 | 1.5 |
| 9 | | Employability Skills | MC | 3 | -- | -- | 0 |
| Total Credits | | | | 18 | | 6 | 21 |

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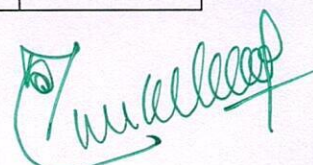
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IV Year – I Semester

| S. No | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Utilization of Electrical Energy | 4 | -- | -- | 3 |
| 2 | Linear IC Applications | 4 | -- | -- | 3 |
| 3 | Power System Operation & Control | 4 | -- | -- | 3 |
| 4 | Switchgear and Protection | 4 | -- | -- | 3 |
| 5 | <u>Elective – I:</u> 1. Electrical Machine Modeling and Analysis 2. Advanced Control Systems 3. Programmable Logic Controllers & Applications 4. Instrumentation | 4 | -- | -- | 3 |
| 6 | <u>Elective – II:</u> 1. Optimization Techniques 2. Electric Power Quality 3. Special Electrical Machines | 4 | -- | -- | 3 |
| 7 | Electrical Simulation Laboratory | -- | -- | 2 | 2 |
| 8 | Power Systems & Simulation Laboratory | -- | -- | 2 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Digital Control Systems | 4 | -- | -- | 3 |
| 2 | HVDC Transmission | 4 | -- | -- | 3 |
| 3 | Electrical Distribution Systems | 4 | -- | -- | 3 |
| 4 | <u>Elective – III:</u> 1. High Voltage Engineering 2. Flexible Alternating Current Transmission Systems 3. Power System Reforms | 4 | -- | -- | 3 |
| 5 | Seminar | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |



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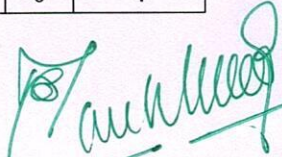
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA-533003, Andhra Pradesh, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

II B.Tech – I Semester

| Sl. No | Course Components | Subjects | L | T | P | Credits |
|----------------------|-------------------|--|-------------|---|---|---------|
| 1 | BSC | Mathematics– IV | 3 | 0 | 0 | 3 |
| 2 | PCC | Electronic Devices and Circuits | 3 | 0 | 0 | 3 |
| 3 | PCC | Electrical Circuit Analysis –II | 3 | 0 | 0 | 3 |
| 4 | PCC | DC Machines and Transformers | 3 | 0 | 0 | 3 |
| 5 | PCC | Electro Magnetic Fields | 3 | 0 | 0 | 3 |
| 6 | PCC | Electrical Circuits Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC | DC Machines and Transformers Lab | 0 | 0 | 3 | 1.5 |
| 8 | PCC | Electronic Devices and Circuits lab | 0 | 0 | 3 | 1.5 |
| 9 | SC | Skill oriented course - Design of Electrical Circuits using Engineering Software Tools | 0 | 0 | 4 | 2 |
| 10 | MC | Professional Ethics & Human Values | 2 | 0 | 0 | 0 |
| Total Credits | | | 21.5 | | | |

II B.Tech – II Semester

| Sl. No | Course Components | Subjects | L | T | P | Credits |
|----------------------|-------------------|--|-------------|---|---|---------|
| 1 | ESC | Python Programming | 3 | 0 | 0 | 3 |
| 2 | PCC | Digital Electronics | 3 | 0 | 0 | 3 |
| 3 | PCC | Power System-I | 3 | 0 | 0 | 3 |
| 4 | PCC | Induction and Synchronous Machines | 3 | 0 | 0 | 3 |
| 5 | HSMC | Managerial Economics & Financial Analysis | 3 | 0 | 0 | 3 |
| 6 | ESC | Python Programming Lab | 0 | 0 | 3 | 1.5 |
| 7 | PCC | Induction and Synchronous Machines Lab | 0 | 0 | 3 | 1.5 |
| 8 | PCC | Digital Electronics Lab | 0 | 0 | 3 | 1.5 |
| 9 | SC | Skill oriented course- IoT Applications of Electrical Engineering Lab | 0 | 0 | 4 | 2 |
| Total Credits | | | 21.5 | | | |
| | | Minors Course* | 4 | 0 | 0 | 4 |
| | | Honors Course* | 4 | 0 | 0 | 4 |


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KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

III Year – I SEMESTER

| S. No | Course Code | Subjects | Category | L | T | P | Credits |
|----------------------|-------------|--|----------|-----------|----------|----------|-----------|
| 1 | | Power Systems-II | EE | 3 | -- | -- | 3 |
| 2 | | Power Electronics | EE | 3 | -- | -- | 3 |
| 3 | | Linear IC Applications | ES | 3 | -- | -- | 3 |
| 4 | | Digital Signal Processing | EE | 3 | -- | -- | 3 |
| 5 | | Microprocessors and Microcontrollers | EE | 3 | -- | -- | 3 |
| 6 | | Electrical Machines-II Laboratory | EE | -- | -- | 3 | 1.5 |
| 7 | | Control Systems Laboratory | EE | -- | -- | 2 | 1 |
| 8 | | Electrical Measurements & Instrumentation Laboratory | EE | -- | -- | 3 | 1.5 |
| 9 | | Socially Relevant Projects | MC | -- | -- | 1 | 1 |
| Total Credits | | | | 15 | 0 | 9 | 20 |

III Year – II SEMESTER

| S. No | Course Code | Subjects | Category | L | T | P | Credits |
|----------------------|-------------|---|----------|-----------|----|----------|-----------|
| 1 | | Electric Drives | EE | 3 | -- | -- | 3 |
| 2 | | Power System Analysis | EE | 3 | -- | -- | 3 |
| 3 | | Data Structures | ES | 3 | -- | -- | 3 |
| 4 | | Digital Control Systems | EE | 3 | -- | -- | 3 |
| 5 | | Elective - I | EL | 3 | -- | -- | 3 |
| 6 | | Open Elective - I | OE | 3 | -- | -- | 3 |
| 7 | | Power Electronics Laboratory | EE | -- | -- | 3 | 1.5 |
| 8 | | Microprocessors & Microcontrollers Laboratory | EE | -- | -- | 3 | 1.5 |
| 9 | | Employability Skills | MC | 3 | -- | -- | 0 |
| Total Credits | | | | 18 | | 6 | 21 |


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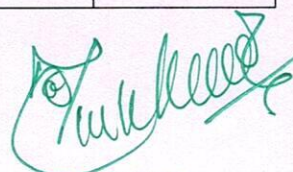
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ENIKEPADU, VIJAYAWADA.

IV Year – I Semester

| S. No | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Utilization of Electrical Energy | 4 | -- | -- | 3 |
| 2 | Linear IC Applications | 4 | -- | -- | 3 |
| 3 | Power System Operation & Control | 4 | -- | -- | 3 |
| 4 | Switchgear and Protection | 4 | -- | -- | 3 |
| 5 | Elective – I: 1. Electrical Machine Modeling and Analysis 2. Advanced Control Systems 3. Programmable Logic Controllers & Applications 4. Instrumentation | 4 | -- | -- | 3 |
| 6 | Elective – II: 1. Optimization Techniques 2. Electric Power Quality 3. Special Electrical Machines | 4 | -- | -- | 3 |
| 7 | Electrical Simulation Laboratory | -- | -- | 2 | 2 |
| 8 | Power Systems & Simulation Laboratory | -- | -- | 2 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Digital Control Systems | 4 | -- | -- | 3 |
| 2 | HVDC Transmission | 4 | -- | -- | 3 |
| 3 | Electrical Distribution Systems | 4 | -- | -- | 3 |
| 4 | Elective – III: 1. High Voltage Engineering 2. Flexible Alternating Current Transmission Systems 3. Power System Reforms | 4 | -- | -- | 3 |
| 5 | Seminar | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |



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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

III YEAR I SEMESTER

| S. No. | Course Code | Course Title | L | T | P | Credits |
|--------|-------------|--|-----------|-----------|----------|-----------|
| 1 | PCC-ME | Dynamics of Machinery | 3 | -- | -- | 3 |
| 2 | PCC-ME | Design of Machine Members-II | 3 | -- | -- | 3 |
| 3 | PCC-ME | Mechanical Measurements & Metrology | 3 | -- | -- | 3 |
| 4 | HSIMS | Managerial Economics and Financial Accountancy | 3 | -- | -- | 3 |
| 5 | PCC-ME | IC Engines & Gas turbines | 3 | -- | -- | 3 |
| 6 | PCC-Lab | Thermal Engineering Lab | -- | -- | 3 | 1.5 |
| 7 | PCC-Lab | Theory of Machines Lab | -- | -- | 3 | 1.5 |
| 8 | PCC-Lab | Mechanical Measurements & Metrology Lab | -- | -- | 3 | 1.5 |
| 9 | PROJ-3101 | Socially Relevant Project | | | | 0.5 |
| | | Total Credits | 15 | -- | 9 | 20 |

III YEAR II SEMESTER

| S. No | Course Code | Course Title | L | T | P | Credits |
|-------|-------------|---|-----------|-----------|----------|-----------|
| 1 | PCC-ME | Operations Research | 3 | -- | -- | 3 |
| 2 | PCC-ME | Heat Transfer | 3 | -- | -- | 3 |
| 3 | PCC-ME | CAD/CAM | 3 | -- | -- | 3 |
| 4 | PEC-ME1 | 1. Composite Materials 2. Refrigeration & Air Conditioning 3. Unconventional Machining Processes 4. Advanced Mechanics of Solids 5. MOOCS(NPTEL/Swayam) | 3 | -- | -- | 3 |
| 5 | PEC-ME2 | 1. Material Characterization 2. Tribology 3. Automobile Engineering 4. Mechatronics 5. MOOCS(NPTEL/Swayam) | 3 | -- | -- | 3 |
| 6 | PCC-Lab | Simulation of Mechanical Systems Lab | -- | -- | 2 | 1 |
| 7 | PCC-Lab | Heat Transfer Lab | -- | -- | 3 | 1.5 |
| 8 | PCC-Lab | CAD /CAM Lab | -- | -- | 3 | 1.5 |
| 9 | PROJ- ME | Summer Internship* | -- | -- | | 1 |
| | | Total Credits | 15 | -- | 9 | 20 |

*The students have to undergo a summer internship for minimum of Four weeks duration from Industries/R&D/ Govt. Organizations after B.Tech III year II-Semester and credits will be awarded in B.Tech IV year I-Semester after evaluation.

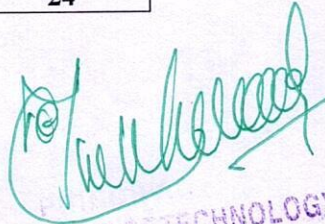
IV Year - I Semester

| S. NO | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Mechatronics | 4 | -- | -- | 3 |
| 2 | CAD/CAM | 4 | -- | -- | 3 |
| 3 | Finite Element Methods | 4 | -- | -- | 3 |
| 4 | Power Plant Engineering | 4 | -- | -- | 3 |
| 5 | Elective I 1. Computational Fluid Dynamics 2. Condition Monitoring 3. Additive Manufacturing | 4 | -- | -- | 3 |
| 6 | Elective II 1. Advanced Materials 2. Design for Manufacture 3. Gas Dynamics & Jet Propulsion | 4 | -- | -- | 3 |
| 7 | CAD/CAM Lab | -- | -- | 2 | 2 |
| 8 | Mechatronics Lab | -- | -- | 2 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Production Planning and Control | 4 | -- | -- | 3 |
| T 2 | Unconventional Machining Processes | 4 | -- | -- | 3 |
| 3 | Automobile Engineering | 4 | -- | -- | 3 |
| 4 | Elective III 1. Thermal Equipment Design 2. Non Destructive Evaluation 3. Quality and Reliability Engineering | 4 | -- | -- | 3 |
| 5 | Seminar | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |

Total Course Credits = 48+44 + 42 + 46 = 180


 S.R.K. INSTITUTE OF TECHNOLOGY
 ENIKEPADU, VIJAYAWADA.

COURSE STRUCTURE AND SYLLABUS

For

ELECTRONICS AND COMMUNICATION ENGINEERING

(Applicable for batches admitted from 2016-2017)



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

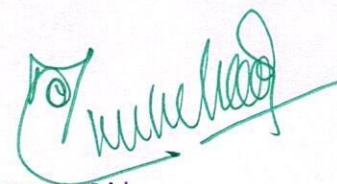
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S.R.K. INSTITUTE OF TECHNOLOGY
ENIKEPADU, VIJAYAWADA.

I Year - I Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1-HS | English – I | 4 | -- | -- | 3 |
| 2-BS | Mathematics - I | 4 | -- | -- | 3 |
| 3-ES | Mathematics -II (Numerical Methods and Complex Variables) | 4 | -- | -- | 3 |
| 4-BS | Applied Physics | 4 | -- | -- | 3 |
| 5-ES | Computer Programming | 4 | -- | -- | 3 |
| 6-ES | Engineering Drawing | 1 | -- | 3 | 3 |
| 7-HS | English - Communication Skills Lab -1 | -- | -- | 3 | 2 |
| 8-BS | Applied / Engineering Physics Laboratory | -- | -- | 3 | 2 |
| 9-BS | Applied / Engineering Physics – Virtual Labs - Assignments | -- | -- | 2 | -- |
| 10-ES | Engineering Workshop & IT Workshop | -- | -- | 3 | 2 |
| Total Credits | | | | | 24 |

I Year - II Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1-HS | English – II | 4 | -- | -- | 3 |
| 2-BS | Mathematics -III | 4 | -- | -- | 3 |
| 3-BS | Applied Chemistry | 4 | -- | -- | 3 |
| 4-ES | Electrical and Mechanical Technology | 4 | -- | -- | 3 |
| 5-HS | Environmental Studies | 4 | -- | -- | 3 |
| 6-ES | Data Structures | 4 | -- | -- | 3 |
| 7-BS | Applied / Engineering Chemistry Laboratory | -- | -- | 3 | 2 |
| 8-HS | English - Communication Skills Lab -2 | -- | -- | 3 | 2 |
| 9-ES | Computer Programming Lab | -- | -- | 3 | 2 |
| Total Credits | | | | | 24 |



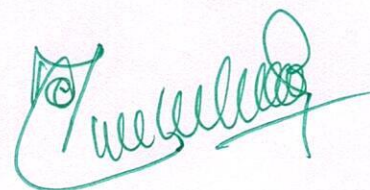
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II Year - I Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Electronic Devices and Circuits | 4 | -- | -- | 3 |
| 2 | Switching Theory and Logic Design | 4 | -- | -- | 3 |
| 3 | Signals and Systems | 4 | -- | -- | 3 |
| 4 | Network Analysis | 4 | -- | -- | 3 |
| 5 | Random Variables and Stochastic Process | 4 | -- | -- | 3 |
| 6 | Managerial Economics & Financial Analysis | 4 | -- | -- | 3 |
| 7 | Electronic Devices and Circuits Lab | -- | -- | 3 | 2 |
| 8 | Networks & Electrical Technology Lab | -- | -- | 3 | 2 |
| Total Credits | | | | | 22 |

II Year - II Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Electronic Circuit Analysis | 4 | -- | -- | 3 |
| 2 | Control Systems | 4 | -- | -- | 3 |
| 3 | Electromagnetic Waves and Transmission Lines | 4 | -- | -- | 3 |
| 4 | Analog Communications | 4 | -- | -- | 3 |
| 5 | Pulse and Digital Circuits | 4 | -- | -- | 3 |
| 6 | Management Science | 4 | -- | -- | 3 |
| 7 | Electronic Circuit Analysis Lab | -- | -- | 3 | 2 |
| 8 | Analog Communications Lab | -- | -- | 3 | 2 |
| Total Credits | | | | | 22 |



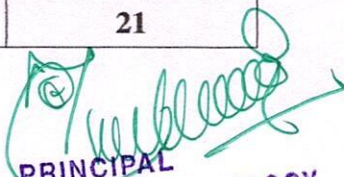
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III Year - I Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Computer Architecture and Organization | 4 | -- | -- | 3 |
| 2 | Linear I C Applications | 4 | -- | -- | 3 |
| 3 | Digital I C Applications | 4 | -- | -- | 3 |
| 4 | Digital Communications | 4 | -- | -- | 3 |
| 5 | Antenna and Wave Propagation | 4 | -- | -- | 3 |
| 6 | Pulse and Digital Circuits Lab | -- | -- | 3 | 2 |
| 7 | Linear I C Applications Lab | -- | -- | 3 | 2 |
| 8 | Digital I C Applications Lab | -- | -- | 3 | 2 |
| MC | Professional Ethics & Human Values | -- | 3 | -- | -- |
| Total Credits | | | | | 21 |

III Year - II Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Micro Processors & Micro Controllers | 4 | -- | -- | 3 |
| 2 | Micro Wave Engineering | 4 | -- | -- | 3 |
| 3 | VLSI Design | 4 | -- | -- | 3 |
| 4 | Digital Signal Processing | 4 | -- | -- | 3 |
| 5 | OPEN ELECTIVE 1. OOPs through Java 2. Data Mining 3. Industrial Robotics 4. Power Electronics 5. Bio-Medical Engineering 6. Artificial Neural Networks | 4 | -- | -- | 3 |
| 6 | Micro Processors & Micro Controllers Lab | -- | -- | 3 | 2 |
| 7 | VLSI Lab | -- | -- | 3 | 2 |
| 8 | Digital Communications Lab | -- | -- | 3 | 2 |
| MC | IPR & Patents | -- | 2 | -- | -- |
| Total Credits | | | | | 21 |


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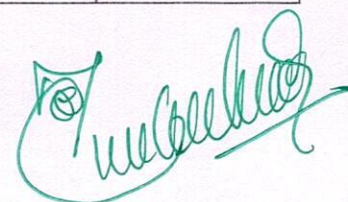
IV Year - I Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|--------------------------------------|----|----|----|-----------|
| 1 | Radar Systems | 4 | -- | -- | 3 |
| 2 | Digital Image Processing | 4 | -- | -- | 3 |
| 3 | Computer Networks | 4 | -- | -- | 3 |
| 4 | Optical Communications | 4 | -- | -- | 3 |
| 5 | Elective I | 4 | -- | -- | 3 |
| | 1. TV Engineering | | | | |
| | 2. Electronic Switching Systems | | | | |
| | 3. System Design through Verilog | | | | |
| 6 | Elective II | 4 | -- | -- | 3 |
| | 1. Embedded Systems | | | | |
| | 2. Analog IC Design | | | | |
| 7 | 3. Network Security & Cryptography | -- | -- | 2 | 2 |
| | Micro Wave Engineering & Optical Lab | | | | |
| 8 | Digital Signal Processing Lab | -- | -- | 2 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S.No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Cellular Mobile Communications | 4 | -- | -- | 3 |
| 2 | Electronic Measurements and Instrumentation | 4 | -- | -- | 3 |
| 3 | Satellite Communications | 4 | -- | -- | 3 |
| 4 | Elective III | 4 | -- | -- | 3 |
| | 1. Wireless sensors & Networks | | | | |
| | 2. Digital IC Design | | | | |
| 5 | 3. Operating Systems | -- | 3 | -- | 2 |
| | Seminar | | | | |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |

Total Course Credits = 48+44 + 42 + 46 = 180



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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE STRUCTURE AND SYLLABUS

For

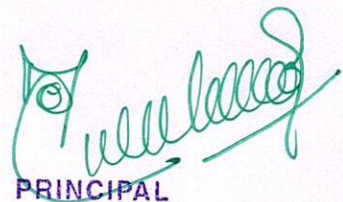
B. TECH ELECTRONICS AND COMMUNICATION ENGINEERING

(Applicable for batches admitted from 2019-2020)



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KAKINADA - 533 003, Andhra Pradesh, India


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ENIKEPADU, VIJAYAWADA.



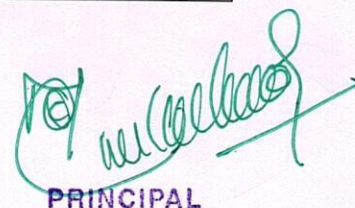
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

I Year – I SEMESTER

| Sl. No | Course Code | Subjects | L | T | P | Credits |
|----------------------|-------------|---|-----------|----------|-----------|-----------|
| 1 | HS1101 | English | 3 | 0 | 0 | 3 |
| 2 | BS1101 | Mathematics - I | 3 | 0 | 0 | 3 |
| 3 | BS1106 | Applied Chemistry | 3 | 0 | 0 | 3 |
| 4 | ES1101 | Programming for Problem Solving Using C | 3 | 0 | 0 | 3 |
| 5 | ES1103 | Engineering Drawing | 1 | 0 | 3 | 2.5 |
| 6 | HS1102 | English Lab | 0 | 0 | 3 | 1.5 |
| 7 | BS1107 | Applied Chemistry Lab | 0 | 0 | 3 | 1.5 |
| 8 | ES1102 | Programming for Problem Solving Using C Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC1101 | Environmental Science | 3 | 0 | 0 | 0 |
| Total Credits | | | 16 | 0 | 12 | 19 |

I Year – II SEMESTER

| Sl. No | Course Code | Subjects | L | T | P | Credits |
|--------|-------------|----------------------------------|-----------|----------|-----------|-----------|
| 1 | BS1202 | Mathematics – II | 3 | 0 | 0 | 3 |
| 2 | BS1203 | Mathematics – III | 3 | 0 | 0 | 3 |
| 3 | BS1204 | Applied Physics | 3 | 0 | 0 | 3 |
| 4 | ES1209 | Network Analysis | 3 | 0 | 0 | 3 |
| 5 | ES1211 | Basic Electrical Engineering | 3 | 0 | 0 | 3 |
| 6 | ES1215 | Electronic workshop | 0 | 0 | 2 | 1 |
| 7 | ES1208 | Basic Electrical Engineering Lab | 0 | 0 | 3 | 1.5 |
| 8 | BS1205 | Applied Physics Lab | 0 | 0 | 3 | 1.5 |
| 9 | HS1203 | Communication Skills Lab | 0 | 0 | 2 | 1 |
| 10 | PR1201 | Engineering Exploration Project | 0 | 0 | 2 | 1 |
| | | | 15 | 0 | 12 | 21 |


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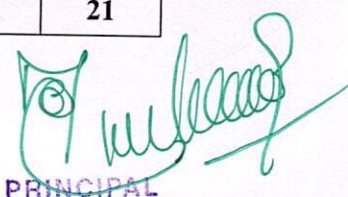
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

II Year – I Semester

| S. No. | Course | Category | L | T | P | Credits |
|--------|---|----------|-----------|---|---|-----------|
| 1 | Electronic Devices and Circuits | PC | 3 | 0 | 0 | 3 |
| 2 | Switching Theory and Logic Design | PC | 3 | 0 | 0 | 3 |
| 3 | Signals and Systems | PC | 3 | 0 | 0 | 3 |
| 4 | Random Variables and Stochastic Processes | PC | 3 | 0 | 0 | 3 |
| 5 | Object Oriented Programming through Java | ES | 3 | 0 | 0 | 3 |
| 6 | Managerial Economics & Financial Analysis | HS | 3 | 0 | 0 | 3 |
| 7 | Electronic Devices and Circuits - Lab | LC | 0 | 0 | 3 | 1.5 |
| 8 | Switching Theory and Logic Design - Lab | LC | 0 | 0 | 3 | 1.5 |
| 9 | Constitution of India | MC | 3 | 0 | 0 | 0 |
| | | | Sub-Total | | | 21 |

II Year – II Semester

| S. No. | Course | Category | L | T | P | Credits |
|--------|--|----------|-----------|---|---|-----------|
| 1 | Electronic Circuit Analysis | PC | 3 | 0 | 0 | 3 |
| 2 | Linear Control Systems | PC | 3 | 0 | 0 | 3 |
| 3 | Electromagnetic Waves and Transmission Lines | PC | 3 | 0 | 0 | 3 |
| 4 | Analog Communications | PC | 3 | 0 | 0 | 3 |
| 5 | Computer Architecture and Organization | ES | 3 | 0 | 0 | 3 |
| 6 | Management and Organizational Behavior | HS | 3 | 0 | 0 | 3 |
| 7 | Electronic Circuit Analysis - Lab | LC | 0 | 0 | 3 | 1.5 |
| 8 | Analog Communications - Lab | LC | 0 | 0 | 3 | 1.5 |
| | | | Sub-Total | | | 21 |


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III Year – I Semester

| S. No. | Course | Category | L | T | P | Credits |
|-----------|---|----------|---|---|---|---------|
| 1 | Linear Integrated Circuits and Applications | PC | 3 | 0 | 0 | 3 |
| 2 | Microprocessor and Microcontrollers | PC | 3 | 0 | 0 | 3 |
| 3 | Digital Communications | PC | 3 | 0 | 0 | 3 |
| 4 | Electronic Measurements & Instrumentation | PC | 3 | 0 | 0 | 3 |
| 5 | Professional Elective (PE 1) | PE | 3 | 0 | 0 | 3 |
| 6 | Linear Integrated Circuits and Applications - Lab | LC | 0 | 0 | 3 | 1.5 |
| 7 | Digital Communications Lab | LC | 0 | 0 | 3 | 1.5 |
| 8 | Microprocessor and Microcontrollers - Lab | LC | 0 | 0 | 3 | 1.5 |
| 9 | Mini Project with Hardware Development | PR | 0 | 0 | 3 | 1.5 |
| 10 | Essence of Indian Traditional Knowledge | MC | 3 | 0 | 0 | 0 |
| Sub-Total | | | | | | 21 |

III Year – IISemester

| S. No. | Course | Category | L | T | P | Credits |
|-----------|--|----------|---|---|---|---------|
| 1 | Wired and Wireless Transmission Devices | PC | 3 | 0 | 0 | 3 |
| 2 | VLSI Design | PC | 3 | 0 | 0 | 3 |
| 3 | Digital Signal Processing | PC | 3 | 0 | 0 | 3 |
| 4 | Professional Elective (PE2) | PE | 3 | 0 | 0 | 3 |
| 5 | Open Elective (OE1) | OE | 3 | 0 | 0 | 3 |
| 6 | Internet of Things | PC | 3 | 0 | 0 | 3 |
| 7 | VLSI Lab | LC | 0 | 0 | 3 | 1.5 |
| 8 | Digital Signal Processing Lab | LC | 0 | 0 | 3 | 1.5 |
| 9 | Intellectual Property Rights (IPR) & Patents | MC | 3 | 0 | 0 | 0 |
| Sub-Total | | | | | | 21 |

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IV Year – I Semester

| S. No. | Course | Category | L | T | P | Credits |
|--------|---|----------|-----------|---|---|---------|
| 1 | Microwave and Optical Communication Engineering | PC | 3 | 0 | 0 | 3 |
| 2 | Data Communications & Computer networks | PC | 3 | 0 | 0 | 3 |
| 3 | Digital Image and Video Processing | PC | 3 | 0 | 0 | 3 |
| 4 | Professional Elective (PE3) | PE | 3 | 0 | 0 | 3 |
| 5 | Professional Elective (PE4) | PE | 3 | 0 | 0 | 3 |
| 6 | Internet of Things Lab | LC | 0 | 0 | 3 | 1.5 |
| 7 | Microwave and Optical Communication Engineering LAB | LC | 0 | 0 | 3 | 1.5 |
| 8 | Project - Part I | PR | 0 | 0 | 6 | 3 |
| | | | Sub-Total | | | 21 |

IV Year – II Semester

| S. No. | Course | Category | L | T | P | Credits |
|--------|-----------------------------|----------|-----------|---|----|---------|
| 1 | Professional Elective (PE5) | PE | 3 | 0 | 0 | 3 |
| 2 | Open Elective (OE2) | OE | 3 | 0 | 0 | 3 |
| 3 | Project - Part II | PR | 0 | 0 | 18 | 9 |
| | | | Sub-Total | | | 15 |
| | | | Total | | | 160 |

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PROFESSIONAL ELECTIVES 1:

1. Information Theory & Coding
2. Digital System Design using HDL
3. Data structures and Algorithms
4. Soft computing techniques and Python programming
5. Simulation & Mathematical Modeling

PROFESSIONAL ELECTIVES 2:

1. Cellular & Mobile Communication
2. Digital IC Design
3. Business Intelligence & Analytics
4. Pattern Recognition
5. Robotics and Automation

PROFESSIONAL ELECTIVES 3:

1. Communication Standards and Protocols
2. Analog IC Design
3. Smart Sensors
4. Advanced Digital Signal Processing
5. Augmented Reality

PROFESSIONAL ELECTIVES 4:

1. Software Radio
2. Low power VLSI Design
3. Embedded Systems
4. DSP processors and Architectures
5. Multi Media Communication

PROFESSIONAL ELECTIVES 5:

1. Wireless Communication
2. VLSI Testing & Testability
3. Machine Learning & Artificial Intelligence
4. Speech Processing
5. Industrial Internet of Things

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

OPEN ELECTIVES FOR ECE:

Open Elective 1:

1. DataMining
2. PowerElectronics
3. MEMS and itsapplications
4. Artificial NeuralNetworks

Open Elective 2:

1. 3D Printing
2. Block chainTechnology
3. Cyber Security &Cryptography

OPEN ELECTIVES OFFERED BY ECE:

- OE 1 Principles of communication
OE 2 Embedded Systems

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COURSE STRUCTURE AND SYLLABUS

For

COMPUTER SCIENCE AND ENGINEERING

(Applicable for batches admitted from 2016-2017)



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IV Year - I Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Cryptography and Network Security | 4 | -- | -- | 3 |
| 2 | Software Architecture & Design Patterns | 4 | -- | -- | 3 |
| 3 | Web Technologies | 4 | -- | -- | 3 |
| 4- HS | Managerial Economics and Financial Analysis | 4 | -- | -- | 3 |
| 5 | Elective-I i. Big Data Analytics ii. Information Retrieval Systems iii. Mobile Computing | 4 | -- | -- | 3 |
| 6 | Elective-II i. Cloud Computing ii. Software Project Management iii. Scripting Languages | 4 | -- | -- | 3 |
| 7 | Software Architecture & Design Patterns Lab | -- | -- | 3 | 2 |
| 8 | Web Technologies Lab | -- | -- | 3 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Distributed Systems | 4 | -- | -- | 3 |
| 2- HS | Management Science | 4 | -- | -- | 3 |
| 3 | Machine Learning | 4 | -- | -- | 3 |
| 4 | Elective-III i. Concurrent and Parallel Programming ii. Artificial Neural Networks iii. Operations Research | 4 | -- | -- | 3 |
| 5 | Seminar | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |

Total Course Credits = 48+44 + 42 + 46 = 180


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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE AND SYLLABUS

For

B. Tech COMPUTER SCIENCE & ENGINEERING

(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA

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A handwritten signature in green ink, likely belonging to the Principal of G.R.K. Institute of Technology.

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

III Year – I SEMESTER

| S.No | Course Code | Courses | L | T | P | Credits |
|--------------|-------------|--|-----------|----------|----------|-----------|
| 1 | CS3101 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 |
| 2 | CS3102 | Computer Networks | 3 | 0 | 0 | 3 |
| 3 | CS3103 | Compiler Design | 3 | 0 | 0 | 3 |
| 4 | CS3104 | Artificial Intelligence | 3 | 0 | 0 | 3 |
| 5 | PE3101 | Professional Elective- I 1. Computer Graphics 2. Principles of Programming Languages 3. Advanced Data Structures 4. Software Testing Methodologies 5. Advanced Computer Architecture | 3 | 0 | 0 | 3 |
| 6 | CS3105 | Computer Networks Lab | 0 | 0 | 2 | 1 |
| 7 | CS3106 | AI Tools & Techniques Lab | 0 | 0 | 3 | 1.5 |
| 8 | CS3107 | Data Mining Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC3101 | Employability Skills -II* | 2 | 0 | 0 | 0 |
| Total | | | 17 | 0 | 8 | 19 |

***Internal Evaluation through Seminar / Test for 50 marks**

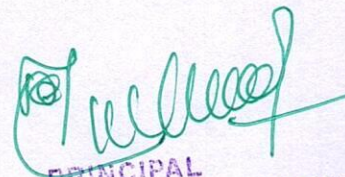
III Year – II SEMESTER

| S.No | Course Code | Courses | L | T | P | Credits |
|--------------|-------------|---|-----------|----------|----------|-----------|
| 1 | CS3201 | Web Technologies | 3 | 0 | 0 | 3 |
| 2 | CS3202 | Distributed Systems | 3 | 0 | 0 | 3 |
| 3 | CS3203 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 |
| 4 | PE3201 | Professional Elective -II (NPTEL/SWAYAM) Duration: 12 Weeks Minimum *Course/subject title can't be repeated | 3 | 0 | 0 | 3 |
| 5 | OE3201 | Open Elective- I (Inter Disciplinary) | 3 | 0 | 0 | 3 |
| 6 | HS3201 | Managerial Economics and Financial Accountancy | 3 | 0 | 0 | 3 |
| 7 | CS3204 | Web Technologies Lab | 0 | 0 | 4 | 2 |
| 9 | PR3201 | Industrial Training / Skill Development Programmes / Research Project in higher learning institutes | 0 | 0 | 0 | 1 |
| Total | | | 18 | 0 | 4 | 21 |

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

III Year – II SEMESTER

| S.No | Course Code | Courses | L | T | P | Credits |
|--------------|-------------|---|-----------|----------|----------|-----------|
| 1 | CS3201 | Web Technologies | 3 | 0 | 0 | 3 |
| 2 | CS3202 | Distributed Systems | 3 | 0 | 0 | 3 |
| 3 | CS3203 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 |
| 4 | PE3201 | Professional Elective -II 1.Mobile Application Development 2.Information Retrieval System 3.Social Network Analysis 4. MOOCS (NPTEL/SWAYAM) Duration: 12 Weeks Minimum *Course/subject title can't be repeated | 3 | 0 | 0 | 3 |
| 5 | OE3201 | Open Elective- I (Inter Disciplinary) | 3 | 0 | 0 | 3 |
| 6 | HS3201 | Managerial Economics and Financial Accountancy | 3 | 0 | 0 | 3 |
| 7 | CS3204 | Web Technologies Lab | 0 | 0 | 4 | 2 |
| 9 | PR3201 | Industrial Training / Skill Development Programmes / Research Project in higher learning institutes | 0 | 0 | 0 | 1 |
| Total | | | 18 | 0 | 4 | 21 |


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

OPEN ELECTIVES FOR ECE:

Open Elective 1:

1. DataMining
2. PowerElectronics
3. MEMS and itsapplications
4. Artificial NeuralNetworks

Open Elective 2:

1. 3D Printing
2. Block chainTechnology
3. Cyber Security &Cryptography

OPEN ELECTIVES OFFERED BY ECE:

- OE 1 Principles of communication
OE 2 Embedded Systems


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COURSE STRUCTURE AND SYLLABUS

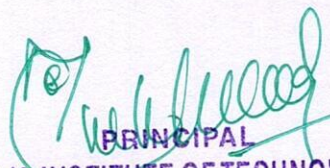
For

COMPUTER SCIENCE AND ENGINEERING

(Applicable for batches admitted from 2016-2017)



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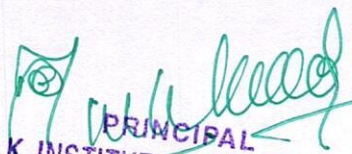
IV Year - I Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Cryptography and Network Security | 4 | -- | -- | 3 |
| 2 | Software Architecture & Design Patterns | 4 | -- | -- | 3 |
| 3 | Web Technologies | 4 | -- | -- | 3 |
| 4- HS | Managerial Economics and Financial Analysis | 4 | -- | -- | 3 |
| 5 | Elective-I i. Big Data Analytics ii. Information Retrieval Systems iii. Mobile Computing | 4 | -- | -- | 3 |
| 6 | Elective-II i. Cloud Computing ii. Software Project Management iii. Scripting Languages | 4 | -- | -- | 3 |
| 7 | Software Architecture & Design Patterns Lab | -- | -- | 3 | 2 |
| 8 | Web Technologies Lab | -- | -- | 3 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Distributed Systems | 4 | -- | -- | 3 |
| 2- HS | Management Science | 4 | -- | -- | 3 |
| 3 | Machine Learning | 4 | -- | -- | 3 |
| 4 | Elective-III i. Concurrent and Parallel Programming ii. Artificial Neural Networks iii. Operations Research | 4 | -- | -- | 3 |
| 5 | Seminar | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total Credits | | | | | 24 |

Total Course Credits = 48+44 + 42 + 46 = 180


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DEPARTMENT OF INFORMATION TECHNOLOGY
COURSE STRUCTURE AND SYLLABUS

For

B. Tech INFORMATION TECHNOLOGY

(Applicable for batches admitted from 2019-2020)



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A handwritten signature in green ink, appearing to be 'S. R. K.', is written over a faint purple stamp.

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DEPARTMENT OF INFORMATION TECHNOLOGY

III Year – I SEMESTER

| S.No | Course Code | Courses | L | T | P | Credits |
|--|-------------|--|----|---|---|---------|
| 1 | IT3101 | Advanced Data Structures | 3 | 1 | 0 | 4 |
| 2 | IT3102 | Computer Networks | 3 | 0 | 0 | 3 |
| 3 | IT3103 | Compiler Design | 3 | 0 | 0 | 3 |
| 4 | IT3104 | Artificial Intelligence | 3 | 0 | 0 | 3 |
| 5 | PE3101 | Professional Elective -I 1. Software Testing Methodologies 2. NoSQL Databases 3. Scripting Languages 4. Computer Graphics 5. R-Programming | 3 | 0 | 0 | 3 |
| 6 | IT3105 | Design and Analysis of Algorithms | 3 | 0 | 0 | 3 |
| 7 | IT3106 | Computer Networks & Compiler Design Lab | 0 | 0 | 3 | 1.5 |
| 8 | IT3107 | AI Tools & Techniques Lab | 0 | 0 | 3 | 1.5 |
| 9 | MC3101 | Employability Skills - II* | 2 | 0 | 0 | 0 |
| Total | | | 20 | 1 | 6 | 22 |
| *Internal Evaluation through Seminar / Test conducted for 50 marks | | | | | | |

III Year – II SEMESTER

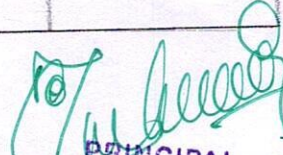
| S.No | Course Code | Courses | L | T | P | Credits |
|--------------|-------------|--|----|---|---|---------|
| 1 | IT3201 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 |
| 2 | OE3201 | Open Elective- I (Inter Disciplinary) | 3 | 0 | 0 | 3 |
| 3 | IT3202 | Web Technologies | 3 | 0 | 0 | 3 |
| 4 | PE3201 | Professional Elective II (NPTEL/SWAYAM) Duration: 12 Weeks Minimum *Course/subject title can't be repeated | 3 | 0 | 0 | 3 |
| 5 | HS3201 | Managerial Economics and Financial Accountancy | 3 | 0 | 0 | 3 |
| 6 | IT3203 | Web Technologies Lab | 0 | 0 | 3 | 1.5 |
| 7 | IT3204 | Data Mining Lab | 0 | 0 | 3 | 1.5 |
| 8 | PR3201 | Industrial Training / Skill Development Programmes / Research Project in higher learning institutes | 0 | 0 | 0 | 1 |
| Total | | | 15 | 0 | 6 | 19 |



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

DEPARTMENT OF CIVIL ENGINEERING

| Open Electives | Professional Elective-I | Professional Elective-II | Professional Elective-III | Professional Elective-IV | Professional Elective-V |
|--------------------------------------|---|------------------------------------|---------------------------------------|---|---|
| a) Disaster Management | a) Repair & Rehabilitation of Buildings | a) Pre-stressed Concrete | a) Bridge Engineering | a) Finite Element Methods | a) Advanced Structural Analysis |
| b) Environmental Pollution & Control | b) Environmental Impact Assessment | b) Watershed Management | b) Industrial Waste Water Treatment | b) Design & Drawing of Irrigation Structures | b) Urban Hydrology |
| c) Elements of Civil Engineering | c) Reinforced Soil Structures | c) Advanced Foundation Engineering | c) Earth & Rock-fill Dams | c) Soil Dynamics and Machine Foundations | c) Ground Improvement Techniques |
| d) Green Technology | d) Traffic Engineering | d) Urban Transportation Planning | d) Intelligent Transportation Systems | d) Road Safety Engineering | d) Pavement Management Systems |
| e) Smart Cities | e) Construction Technology & Management | e) Architecture Town Planning | e) Building Services | e) Disaster Management & Mitigation | e) Low-cost Housing |
| f) Project Management | | | | f) SWAYAM / NPTEL / MOOCS COURSES (12 weeks duration) | f) SWAYAM / NPTEL / MOOCS COURSES (12 weeks duration) |
| g) Traffic Safety | | | | | |
| h) Geo-Spatial Technologies | | | | | |
| i) Waste Water Treatment | | | | | |


 PRINCIPAL
 S.R.K. INSTITUTE OF TECHNOLOGY
 ENIKEPADU, VIJAYAWADA.

COURSE STRUCTURE AND SYLLABUS
FOR
INFORMATION TECHNOLOGY
(Applicable for batches admitted from 2016-2017)



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


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ENIKEPADU, VIJAYAWADA.

IV Year - I Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|---|----|----|----|-----------|
| 1 | Cryptography and Network Security | 4 | -- | -- | 3 |
| 2 | Mobile Computing | 4 | -- | -- | 3 |
| 3 | Data Ware Housing and Business Intelligence | 4 | -- | -- | 3 |
| 4- HS | Managerial Economics and Financial Analysis | 4 | -- | -- | 3 |
| 5 | Elective-I | 4 | -- | -- | 3 |
| | i. Big Data Analytics | | | | |
| | ii. Information Retrieval Systems | | | | |
| | iii. Internet of Things | | | | |
| | iv. Multimedia Programming | | | | |
| 6 | Elective-II | 4 | -- | -- | 3 |
| | i. Cloud Computing | | | | |
| | ii. Software Project Management | | | | |
| | iii. Machine Learning | | | | |
| | iv. Decision Support System | | | | |
| 7 | Mobile Computing Lab | -- | -- | 3 | 2 |
| 8 | Cryptography and Network Security Lab | -- | -- | 3 | 2 |
| Total Credits | | | | | 22 |

IV Year - II Semester

| S. No. | Subjects | L | T | P | Credits |
|----------------------|--|----|----|----|-----------|
| 1 | Distributed Systems | 4 | -- | -- | 3 |
| 2- HS | Management Science | 4 | -- | -- | 3 |
| 3 | Management Information System | 4 | -- | -- | 3 |
| 4 | Elective-III | 4 | -- | -- | 3 |
| | i. Concurrent and Parallel Programming | | | | |
| | ii. Cyber Security | | | | |
| | iii. Artificial Neural Networks | | | | |
| | iv. Software Quality Assurance | | | | |
| 5 | Seminar | -- | 3 | -- | 2 |
| 6 | Project | -- | -- | -- | 10 |
| Total credits | | | | | 24 |

Total Course Credits = 48+44 + 42 + 46 = 180



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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

**COURSE STRUCTURE & SYLLABUS M.Tech CSE for
COMPUTER SCIENCE & ENGINEERING PROGRAMME**
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

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

I-SEMESTER

| S.No | Course Code | Courses | Category | L | T | P | C |
|----------------------|-------------|--|----------|---|---|---|----|
| 1 | MTCSE1101 | Program Core-1 Mathematical Foundations of Computer Science | PC | 3 | 0 | 0 | 3 |
| 2 | MTCSE1102 | Program Core-2 Advanced Data Structures & Algorithms | PC | 3 | 0 | 0 | 3 |
| 3 | MTCSE1103 | Program Elective-1 1. Big Data Analytics 2. Digital Image Processing 3. Advanced Operating Systems | PE | 3 | 0 | 0 | 3 |
| 4 | MTCSE1104 | Program Elective-2 1. Advanced Computer Networks 2. Internet of Things 3. Object Oriented Software Engineering | PE | 3 | 0 | 0 | 3 |
| 5 | MTCSE1105 | Research Methodology and IPR | CC | | | 0 | 2 |
| 6 | MTCSE1106 | Laboratory-1 Advanced Data Structures & Algorithms Lab | LB | 0 | 0 | 4 | 2 |
| 7 | MTCSE1107 | Laboratory-2 Advanced Computing Lab | LB | 0 | 0 | 4 | 2 |
| 8 | MTCSE1108 | Audit Course-1* | AC | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | | 18 |

*Student has to choose any one audit course listed below.

II SEMESTER

| S.No | Course Code | Courses | Category | L | T | P | C |
|----------------------|-------------|--|----------|---|---|---|----|
| 1 | MTCSE1201 | Program Core-3 Machine learning | PC | 3 | 0 | 0 | 3 |
| 2 | MTCSE1202 | Program Core-4 MEAN Stack Technologies | PC | 3 | 0 | 0 | 3 |
| 3 | MTCSE1203 | Program Elective-3 1. Advanced Databases and Mining 2. Ad Hoc & Sensor Networks 3. Soft Computing | PE | 3 | 0 | 0 | 3 |
| 4 | MTCSE1204 | Program Elective-4 1. Cloud Computing 2. Principles of computer security 3. High Performance Computing | PE | 3 | 0 | 0 | 3 |
| 5 | MTCSE1205 | Laboratory-3 Machine Learning with python lab | LB | 0 | 0 | 4 | 2 |
| 6 | MTCSE1206 | Laboratory-4 MEAN Stack Technologies Lab | LB | 0 | 0 | 4 | 2 |
| 7 | MTCSE1207 | Mini Project with Seminar | MP | 2 | 0 | 0 | 2 |
| 8 | MTCSE1208 | Audit Course-2 * | AC | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | | 18 |




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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

**COURSE STRUCTURE & SYLLABUS M.Tech CSE for
COMPUTER SCIENCE & ENGINEERING PROGRAMME**
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA


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

I-SEMESTER

| S.No | Course Code | Courses | Category | L | T | P | C |
|----------------------|-------------|--|----------|---|---|---|----|
| 1 | MTCSE1101 | Program Core-1 Mathematical Foundations of Computer Science | PC | 3 | 0 | 0 | 3 |
| 2 | MTCSE1102 | Program Core-2 Advanced Data Structures & Algorithms | PC | 3 | 0 | 0 | 3 |
| 3 | MTCSE1103 | Program Elective-1 1. Big Data Analytics 2. Digital Image Processing 3. Advanced Operating Systems | PE | 3 | 0 | 0 | 3 |
| 4 | MTCSE1104 | Program Elective-2 1. Advanced Computer Networks 2. Internet of Things 3. Object Oriented Software Engineering | PE | 3 | 0 | 0 | 3 |
| 5 | MTCSE1105 | Research Methodology and IPR | CC | | | 0 | 2 |
| 6 | MTCSE1106 | Laboratory-1 Advanced Data Structures & Algorithms Lab | LB | 0 | 0 | 4 | 2 |
| 7 | MTCSE1107 | Laboratory-2 Advanced Computing Lab | LB | 0 | 0 | 4 | 2 |
| 8 | MTCSE1108 | Audit Course-1* | AC | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | | 18 |

*Student has to choose any one audit course listed below.

II SEMESTER

| S.No | Course Code | Courses | Category | L | T | P | C |
|----------------------|-------------|--|----------|---|---|---|----|
| 1 | MTCSE1201 | Program Core-3 Machine learning | PC | 3 | 0 | 0 | 3 |
| 2 | MTCSE1202 | Program Core-4 MEAN Stack Technologies | PC | 3 | 0 | 0 | 3 |
| 3 | MTCSE1203 | Program Elective-3 1. Advanced Databases and Mining 2. Ad Hoc & Sensor Networks 3. Soft Computing | PE | 3 | 0 | 0 | 3 |
| 4 | MTCSE1204 | Program Elective-4 1. Cloud Computing 2. Principles of computer security 3. High Performance Computing | PE | 3 | 0 | 0 | 3 |
| 5 | MTCSE1205 | Laboratory-3 Machine Learning with python lab | LB | 0 | 0 | 4 | 2 |
| 6 | MTCSE1206 | Laboratory-4 MEAN Stack Technologies Lab | LB | 0 | 0 | 4 | 2 |
| 7 | MTCSE1207 | Mini Project with Seminar | MP | 2 | 0 | 0 | 2 |
| 8 | MTCSE1208 | Audit Course-2 * | AC | 2 | 0 | 0 | 0 |
| Total Credits | | | | | | | 18 |

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

MASTER OF COMPUTER APPLICATIONS (MCA)
(For Two-Year PG Programme)

COURSE STRUCTURE AND SYLLABUS
For PG – R20

MASTER OF COMPUTER APPLICATIONS (MCA)
(For Two-Year PG Programme)

(Applicable for batches admitted from 2020-21)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

KAKINADA - 533 003, Andhra Pradesh, India

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ENIKEPADU, VIJAYAWADA.



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

MASTER OF COMPUTER APPLICATIONS (MCA)
(For Two-Year PG Programme)
COURSE STRUCTURE

I Semester

| S.No | Course Code | Course Name | Category | L | T | P | Credits |
|-------|-------------|---|----------|----|---|----|---------|
| 1 | MCA1101 | Business Communication | BS&H | 2 | 0 | 0 | 2 |
| 2 | MCA1102 | Mathematical and Statistical Foundations | BS&H | 3 | 0 | 0 | 3 |
| 3 | MCA1103 | Computer Organization & Operating Systems | PC | 3 | 1 | 0 | 4 |
| 4 | MCA1104 | Data Structures | PC | 3 | 0 | 0 | 3 |
| 5 | MCA1105 | Object Oriented Programming with JAVA | PC | 3 | 0 | 0 | 3 |
| 6 | MCA1106 | Operating Systems and Linux Lab | PC | 0 | 0 | 3 | 1.5 |
| 7 | MCA1107 | Data Structures Lab | PC | 0 | 0 | 3 | 1.5 |
| 8 | MCA1108 | JAVA Programming Lab | PC | 0 | 0 | 3 | 1.5 |
| 9 | MCA1109 | Socially Relevant Project using Design Thinking | MC | 0 | 0 | 1 | 0.5 |
| Total | | | | 15 | 1 | 10 | 20 |

II Semester

| S.No | Course Code | Course Name | Category | L | T | P | Credits |
|-------|-------------|--|----------|----|---|----|---------|
| 1 | MCA2101 | Database Management Systems | PC | 3 | 0 | 0 | 3 |
| 2 | MCA2102 | Computer Networks | PC | 3 | 0 | 0 | 3 |
| 3 | MCA2103 | Software Engineering and Design Patterns | PC | 3 | 0 | 0 | 3 |
| 4 | MCA2104 | Data Warehousing and Mining | PC | 3 | 0 | 0 | 3 |
| 5 | MCA2105 | Elective-I <ul style="list-style-type: none"> • No SQL Databases • Design and Analysis of Algorithms • Mobile Application Development • Artificial Intelligence • Accounting for Managers | PE | 3 | 0 | 0 | 3 |
| 6 | MCA2106 | DBMS Lab | PC | 0 | 0 | 3 | 1.5 |
| 7 | MCA2107 | Computer Networks Lab | PC | 0 | 0 | 3 | 1.5 |
| 8 | MCA2108 | Software Engineering and Design Patterns Lab | PC | 0 | 0 | 3 | 1.5 |
| 9 | MCA2109 | Employability Skills | MC | 0 | 0 | 1 | 0.5 |
| 10 | MCA2110 | Bridge Course (Python Programming to be taken through MOOCs) | MC | 0 | 0 | 0 | 0 |
| Total | | | | 15 | 0 | 10 | 20 |


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KAKINADA – 533 003, Andhra Pradesh, India

MASTER OF COMPUTER APPLICATIONS (MCA)
(For Two-Year PG Programme)

III Semester

| S.No | Course Code | Course Name | Category | L | T | P | Credits |
|--------------|-------------|---|----------|-----------|----------|-----------|-----------|
| 1 | MCA3101 | Machine Learning with Python | PC | 3 | 0 | 0 | 3 |
| 2 | MCA3102 | Internet of Things | PC | 3 | 0 | 0 | 3 |
| 3 | MCA3103 | Web Technologies | PC | 3 | 0 | 0 | 3 |
| 4 | MCA3104 | Cryptography and Network Security | PC | 3 | 0 | 0 | 3 |
| 5 | MCA3105 | Elective-II <ul style="list-style-type: none"> • Soft Computing • Software Project Management • Cloud Computing • Optimization Techniques • Cyber Security | PE | 3 | 0 | 0 | 3 |
| 6 | MCA3106 | Machine Learning with Python Lab | PC | 0 | 0 | 3 | 1.5 |
| 7 | MCA3107 | IoT Lab | PC | 0 | 0 | 3 | 1.5 |
| 8 | MCA3108 | Web Technologies Lab | PC | 0 | 0 | 4 | 2 |
| 9 | MCA3109 | Internship / Industry Oriented Mini Project/ Skill Development Course (Minimum 6-weeks) | PR | 0 | 0 | 0 | 2 |
| Total | | | | 15 | 0 | 10 | 22 |

IV Semester

| S.No | Course Code | Course Name | Category | L | T | P | Credits |
|--------------|-------------|---|----------|----------|----------|----------|-----------|
| 1 | MCA4101 | Elective-III * <ul style="list-style-type: none"> • Digital Marketing • Human Resource Management • Deep Learning • Ad-hoc and Sensor Networks • MOOCs-1 (NPTEL/SWAYAM) - Full Stack Technologies - Any recommended course | PE | 3 | 0 | 0 | 3 |
| 2 | MCA4102 | Elective-IV * <ul style="list-style-type: none"> • Network Programming • Block Chain technologies • Software Testing Methodologies • Big Data Analytics • MOOCs-2 (NPTEL/SWAYAM) -Data Science -Any recommended course | PE | 3 | 0 | 0 | 3 |
| 3 | MCA4103 | Project Work/ Dissertation | PR | 0 | 0 | 0 | 12 |
| Total | | | | 6 | 0 | 0 | 18 |

***Students going for Industrial Project/Thesis will complete these courses through MOOCs (even in earlier semester)**

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

MASTER OF BUSINESS ADMINISTRATION (MBA)
COURSE STRUCTURE & SYLLABUS
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

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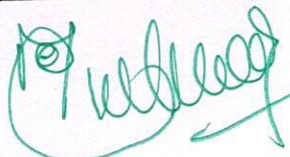
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

I YEAR I SEMESTER

| S.No | Course Code | Courses | Marks | L | T | P | C |
|--------------|---------------------------|--|------------|-----------|----------|----------|-----------|
| 1 | C-101 | Management and Organizational Behavior | 100 | 4 | 0 | 0 | 4 |
| 2 | C-102 | Managerial Economics | 100 | 4 | 0 | 0 | 4 |
| 3 | C-103 | Accounting for Managers | 100 | 4 | 0 | 0 | 4 |
| 4 | C-104 | Quantitative Analysis for Business Decisions | 100 | 4 | 0 | 0 | 4 |
| 5 | C-105 | Legal and Business Environment | 100 | 4 | 0 | 0 | 4 |
| 6 | C-106 | Business Communication and Soft skills | 100 | 4 | 0 | 0 | 4 |
| 7 | C-107 Open Elective | Cross Cultural Management ✓ Rural Innovation projects MOOCs : SWAYAM/NPTEL- Related to Management Courses other than listed courses in the syllabus | 100 | 4 | 0 | 0 | 4 |
| 8 | C-108 | Business Communication and Soft skills Lab | 50 | 0 | 0 | 2 | 2 |
| 9 | C-109 | Information Technology – Lab1(Spreadsheet and Tally) | 50 | 0 | 0 | 2 | 2 |
| Total | | | 800 | 28 | 0 | 4 | 32 |

**I YEAR II
SEMESTER**

| S.No | Course Code | Courses | Marks | L | T | P | C |
|--------------|------------------------|---|------------|-----------|----------|----------|-----------|
| 1 | C-201 | Financial Management | 100 | 4 | 0 | 0 | 4 |
| 2 | C-202 | Human Resource Management | 100 | 4 | 0 | 0 | 4 |
| 3 | C-203 | Marketing Management | 100 | 4 | 0 | 0 | 4 |
| 4 | C-204 | Operations Management | 100 | 4 | 0 | 0 | 4 |
| 5 | C-205 | Business Research Methods | 100 | 4 | 0 | 0 | 4 |
| 6 | C-206 open elective | Project Management Technology Management ✓ Lean Management Database Management System | 100 | 4 | 0 | 0 | 4 |
| 7 | C-207 | IT-lab 2(Programming R) | 50 | 0 | 0 | 2 | 2 |
| Total | | | 650 | 24 | 0 | 2 | 26 |



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