

# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

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

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



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

## I Semester

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

## II Semester

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

### III Semester

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

### IV Semester

S. No.	Subject	L	P	Credits
1	Seminar – II	--	--	2
2	Project Work Part - II	--	--	18
<b>Total Credits</b>				<b>20</b>

# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**MBA (Regular)**

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



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

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, KAKINADA: KAKINADA****School of Management Studies****Course Structure MBA (Regular) 2016-2017**

(Effective for the students admitted into first year from the academic year 2016-2017)

**Semester - I**

Subject	Title	Marks	Credits
C-101	Principles of Management	100	3
C-102	Managerial Economics	100	3
C-103	Accounting for Managers	100	3
C-104	Managerial Communication & Soft skills	100	3
C-105	Business Environment	100	3
C-106	Quantitative Analysis for Business Decision	100	3
C-107	IT – LAB	100	3

**Semester - II**

Subject	Title	Marks	Credits
C-201	Financial Management	100	3
C-202	Human Resource Management	100	3
C-203	Marketing Management	100	3
C-204	Production and Operations Management	100	3
C-205	Business Research Methods	100	3
C-206	Organizational Behavior	100	3
C-207	Mini Project *	50	2
	Seminar on Mini Project	50	2

**Semester - III**

Subject	Title	Marks	Credits
C-301	Strategic Management	100	3
C -302	Legal Aspects of Business	100	3
C -303	Business Ethics & Corporate Governance	100	3
E -301	Elective – 1	100	3
E-302	Elective – 2	100	3
E-303	Elective – 3	100	3
E-304	Elective – 4	100	3

**Semester - IV**

Subject	Title	Marks	Credits
C -401	Logistic and Supply Chain Management	100	3
C -402	Entrepreneurship Development	100	3
E-401	Elective – 5	100	3
E-402	Elective – 6	100	3
E-403	Elective – 7	100	3
E-404	Elective – 8	100	3
	Major Project & Comprehensive Viva	Grade	8
<b>Total Marks / Credits</b>		<b>2700</b>	<b>90</b>

**Elective:** The student has to choose any **ONE** Specialization from the following areas in the beginning of III Semester

### III SEMESTER

#### HR

<b>S. no</b>	<b>SUBJECT TITLE</b>
<b>1</b>	Leadership Management
<b>2</b>	Compensation and Reward Management
<b>3</b>	Performance Management
<b>4</b>	Strategic Human Resource Management

#### FINANCE

<b>S. no</b>	<b>SUBJECT TITLE</b>
<b>1</b>	Security Analysis & Portfolio Management
<b>2</b>	Banking and Insurance Management
<b>3</b>	Advance Management Accounting
<b>4</b>	Strategic Financial Management

#### MARKETING

<b>S. no</b>	<b>SUBJECT TITLE</b>
<b>1</b>	Consumer Behavior
<b>2</b>	Retail Management
<b>3</b>	Customer Relationship Management
<b>4</b>	Strategic Marketing Management

#### SYSTEMS

<b>S. no</b>	<b>SUBJECT TITLE</b>
<b>1</b>	E-Business
<b>2</b>	RDBMS
<b>3</b>	Web Designing
<b>4</b>	System Analysis & Design

## IV SEMESTER

### HR

	SUBJECT TITLE
<b>Elective-5</b>	Organizational Development & Change Management
<b>Elective-6</b>	Global HRM
<b>Elective-7</b>	Labor Welfare & Legislation
<b>Elective-8</b>	Management of Industrial Relations

### FINANCE

	SUBJECT TITLE
<b>Elective-5</b>	Financial Markets and Services
<b>Elective-6</b>	Global Financial Management
<b>Elective-7</b>	Risk Management
<b>Elective-8</b>	Tax Management

### MARKETING

	SUBJECT TITLE
<b>Elective-5</b>	Services Marketing
<b>Elective-6</b>	Promotional Distribution Management
<b>Elective-7</b>	Global Marketing Management
<b>Elective-8</b>	Supply Chain Management

### SYSTEMS

	SUBJECT TITLE
<b>Elective-5</b>	Business Intelligence
<b>Elective-6</b>	Enterprise Resource Planning
<b>Elective-7</b>	Cyber Laws & Security
<b>Elective-8</b>	Information Systems Audit

#### \*Mini Project Report

The student should undergo survey based fieldwork under the guidance of Internal Faculty and submit the report before the completion of II Semester End Examinations.

# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

## **COMPUTER SCIENCE & ENGINEERING**

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



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



**I Semester**

S.No.	SUBJECT	L	P	C
1	ADVANCED DATA STRUCTURES AND ALGORITHM ANALYSIS	4	--	3
2	MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE	4	--	3
3	COMPUTER ORGANIZATION AND ARCHITECTURE	4	--	3
4	DATABASE MANAGEMENT SYSTEMS	4	--	3
5	ADVANCED OPERATING SYSTEMS	4	--	3
6	DATA WAREHOUSING AND DATA MINING	4	--	3
7	CSE LAB 1	--	3	2
<b>Total Credits</b>				<b>20</b>

**II Semester**

S.No.	SUBJECT	L	P	C
1	CYBER SECURITY	4	--	3
2	COMPUTER NETWORKS	4	--	3
3	BIG DATA ANALYTICS	4	--	3
4	ADVANCED UNIX PROGRAMMING	4	--	3
5	<b>Elective – 1</b> 1. SOFTWARE ENGINEERING 2. ARTIFICIAL INTELLIGENCE 3. COMPILER DESIGN 4. MACHINE LEARNING	4	--	3
6	<b>Elective – 2</b> 1. IMAGE PROCESSING 2. PARALLEL ALGORITHMS 3. CLOUD COMPUTING 4. MOBILE COMPUTING	4	--	3
7	CSE LAB 2	--	3	2
<b>Total Credits</b>				<b>20</b>

**III Semester**

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

**IV Semester**

S. No.	Subject	L	P	Credits
1	Seminar – II	--	--	2
2	Project Work Part - II	--	--	18
<b>Total Credits</b>				<b>20</b>

# **ACADEMIC REGULATIONS & COURSE STRUCTURE**

**For**

**POWER ELECTRONICS (PE)  
POWER AND INDUSTRIAL DRIVES (P&ID)  
POWER ELECTRONICS AND ELECTRICAL DRIVES (PE & ED)  
POWER ELECTRONICS AND DRIVES (PE&D)  
POWER ELECTRONICS AND SYSTEMS (PE&S)  
ELECTRICAL MACHINES AND DRIVES (EM&D)**

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



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

## I Semester

S. No.	Subject	L	P	Credits
1	Electrical Machine Modeling & Analysis	4	--	3
2	Analysis of Power Electronic Converters	4	--	3
3	Power Electronic Control of DC Drives	4	--	3
4	Flexible AC Transmission Systems	4	--	3
5	<b>Elective – I</b> i. Modern Control Theory ii. Power Quality ii. Optimization Techniques	4	--	3
6	<b>Elective – II</b> i. Energy Auditing, Conservation and Management ii. Artificial Intelligence Techniques iii. HVDC Transmission	4	--	3
7	Simulation Laboratory	--	4	2
<b>Total Credits</b>				<b>20</b>

## II Semester

S. No.	Subject	L	P	Credits
1	Switched Mode Power Conversion	4	--	3
2	Power Electronic Control of AC Drives	4	--	3
3	Digital Controllers	4	--	3
4	Custom Power devices	4	--	3
5	<b>Elective – III</b> i. Renewable Energy Systems ii. Reactive Power Compensation & Management iii. Electrical Distribution Systems	4	--	3
6	<b>Elective – IV</b> i. Smart Grid Technologies ii. Special Machines iii. Programmable Logic Controllers & Applications	4	--	3
7	Power Converters & Drives Laboratory	--	4	2
<b>Total Credits</b>				<b>20</b>

### III Semester

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

### IV Semester

S. No.	Subject	L	P	Credits
1	Seminar – II	--	--	2
2	Project Work Part - II	--	--	18
<b>Total Credits</b>				<b>20</b>

**ACADEMIC REGULATIONS**  
**COURSE STRUCTURE & DETAILED SYLLABUS**

For

**MASTER OF BUSINESS ADMINISTRATION**

(Applicable for the batches admitted from 2019-20)



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**  
KAKINADA – 533003, 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	2	0	2	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	Information Technology – Lab1(Spreadsheet and Tally)	50	0	0	2	2
<b>Total</b>			<b>750</b>	<b>28</b>	<b>0</b>	<b>2</b>	<b>30</b>

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
<b>Total</b>			<b>650</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>26</b>

II YEAR III SEMESTER							
S.No	Course Code	Courses	Marks	L	T	P	C
1	C-301	Strategic Management	100	4	0	0	4
2	C -302	Operations Research	100	4	0	0	4
3	E -301	Elective – 1	100	4	0	0	3
4	E-302	Elective – 2	100	4	0	0	3
5	E-303	Elective – 3	100	4	0	0	3
6	E-304	Elective – 4	100	4	0	0	3
7	C-304	Industrial Project based on Summer Internship	150	4	0	0	4
<b>Total</b>			<b>750</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>24</b>

II YEAR IV SEMESTER							
S.No	Course Code	Courses	Marks	L	T	P	C
1	C -401	Supply Chain Management and Analytics	100	4	0	0	4
2	C-402	Innovation and Entrepreneurship	100	4	0	0	4
3	E-401	Elective – 5	100	4	0	0	3
4	E-402	Elective – 6	100	4	0	0	3
5	E-403	Elective – 7	100	4	0	0	3
6	E-404	Elective – 8	100	4	0	0	3
7	C-403	Comprehensive Viva- voce	50	0	0	0	2
<b>Total Marks / Credits</b>			<b>650</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>22</b>
			<b>2800</b>				<b>102</b>

\*The project work documentation shall be checked with anti plagiarism software (Turnitin). The permissible similarity shall be less than 30%.

\*Comprehensive Viva is to verify the student knowledge as a whole from which he was studied during the two year course work.

**III SEMESTER**  
**Human Resource Management**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EH-301	Leadership and Change Management
<b>2</b>	EH-302	Performance Evaluation and Compensation Management
<b>3</b>	EH-303	Human Resource Metrics and Analytics
<b>4</b>	EH-304	Human Capital Management
<b>5</b>	EH-305	Manpower Planning, Recruitment, and Selection

**IV SEMESTER**  
**Human Resource Management**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EH-401	Labor Welfare and employment laws
<b>7</b>	EH-402	International HRM
<b>8</b>	EH-403	Employee Relations and Engagement
<b>9</b>	EH-404	Human Resources Development
<b>10</b>	EH-405	Strategic HRM



### **III SEMESTER FINANCE**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EF-301	Investment Analysis and Portfolio Management
<b>2</b>	EF-302	Managing Banks and Financial Institutions
<b>3</b>	EF-303	Financial Markets and Services
<b>4</b>	EF-304	Mergers, Acquisitions and Corporate Restructuring
<b>5</b>	EF-305	Taxation

### **IV SEMESTER FINANCE**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EF-401	Financial Derivatives
<b>7</b>	EF-402	Global Financial Management
<b>8</b>	EF-403	Financial Risk Management
<b>9</b>	EF-404	Strategic Financial Management
<b>10</b>	EF-405	Behavioral Finance

**III SEMESTER - ELECTIVES  
MARKETING**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
1	EM-301	Consumer Behavior
2	EM-302	Retail Management
3	EM-303	Customer Relationship Management
4	EM-304	Strategic Marketing Management
5	EM-305	Digital and Social Media Marketing

**IV SEMESTER MARKETING**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
6	EM-401	Services Marketing
7	EM-402	Promotional and Distribution Management
8	EM-403	Green Marketing
9	EM-404	Advertising and Brand Management
10	EM-405	Global Marketing Management

**III SEMESTER ELECTIVES  
SYSTEMS**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
1	ES-301	Data Mining for Business Decisions
2	ES-302	Managing Software Projects
3	ES-303	Web Designing
4	ES-304	Business Analytics
5	ES-305	Managing Digital Innovation and Transformation

**IV SEMESTER SYSTEMS**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
6	ES-401	Big Data Analytics
7	ES-402	Enterprise Resource Planning
8	ES-403	Cyber Laws & Security
9	ES-404	Information Systems Audit
10	ES-405	Artificial Intelligence and Machine Learning

**OPERATIONS MANAGEMENT  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EO-301	Service Operations Management
<b>2</b>	EO-302	Quality Toolkit for Managers
<b>3</b>	EO-303	Pricing and Revenue Management
<b>4</b>	EO-304	Operations Strategy
<b>5</b>	EO-305	Sales and Operations Planning

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EO-401	Behavioral Operations Management
<b>7</b>	EO-402	Theory of Constraints
<b>8</b>	EO-403	Management of Manufacturing Systems
<b>9</b>	EO-404	Sourcing Management
<b>10</b>	EO-405	Supply Chain Analytics

**TRAVEL AND TOURISM MANAGEMENT  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
1	ET-301	Travel agency and Tour Operations
2	ET-302	Hospitality Management
3	ET-303	Resort Planning and Destination Management
4	ET-304	Tourism Policy and Planning
5	ET-305	Recreation Management

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
6	ET-401	Travel Media and Journalism
7	ET-402	Event Management
8	ET-403	Front Office Management
9	ET-404	Information Technology and Tourism
10	ET-405	Eco Tourism Practices



**HEALTH CARE AND HOSPITAL MANAGEMENT  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EHC-301	Hospital organization and Management
<b>2</b>	EHC-302	Health Care Policies and Delivery Systems
<b>3</b>	EHC-303	Health Economics
<b>4</b>	EHC-304	Hospital Functions and Support Services
<b>5</b>	EHC-305	Revenue Cycle Management

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EHC-401	Patient Care & Services Management
<b>7</b>	EHC-402	Managed Health Care and Insurance
<b>8</b>	EHC-403	Health Laws, Ethics and Regulations
<b>9</b>	EHC-404	Hospital Management Information System
<b>10</b>	EHC-405	Health Analytics

**ENTREPRENEURSHIP AND SMALL ENTERPRISE MANAGEMENT  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
1	EE-301	Indian Models in Entrepreneurship
2	EE-302	Social Entrepreneurship
3	EE-303	Business Plan Preparation for Small Business
4	EE-304	Entrepreneurial Marketing
5	EE-305	Planning, Structuring, and Financing Small Business

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
6	EE-401	Marketing for Small Business
7	EE-402	Finance and Accounting for Small Business
8	EE-403	Technology Appreciation and Intellectual Property Rights
9	EE-404	Innovation Technology Management
10	EE-405	Venture Valuation and Accounting

**AGRO-BUSINESS MANAGEMENT  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
	EA-301	Agro-Marketing Management
<b>2</b>	EA-302	Agro-Business and Rural Green Market
<b>3</b>	EA-303	Agro-Business Environment
<b>4</b>	EA-304	Agro-Supply Chain Management
<b>5</b>	EA-305	Entrepreneurship for Agriculture

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EA-401	Food Processing Management
<b>7</b>	EA-402	Disaster Management
<b>8</b>	EA-403	Food Retail Management
<b>9</b>	EA-404	Agro- Technology Management
<b>10</b>	EA-405	Organic Food Technology



**LOGISTICS AND SUPPLY CHAIN MANAGEMENT  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	<b>EL-301</b>	<b>Store keeping and Warehousing management</b>
<b>2</b>	<b>EL-302</b>	<b>Transportation and Infrastructure Management for SCM</b>
<b>3</b>	<b>EL-303</b>	<b>Purchasing and Material Management</b>
<b>4</b>	<b>EL-304</b>	<b>Reverse Logistics</b>
<b>5</b>	<b>EL-305</b>	<b>Supply Chain Risk Management</b>

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	<b>EL-401</b>	<b>Enterprise Resource Planning</b>
<b>7</b>	<b>EL-402</b>	<b>International Logistics Management</b>
<b>8</b>	<b>EL-403</b>	<b>Lean Supply Chain Management</b>
<b>9</b>	<b>EL-404</b>	<b>Shipping and Maritime law</b>
<b>10</b>	<b>EL-405</b>	<b>Green Supply Chain Management</b>

**BUSINESS ANALYTICS  
III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EB-301	Essentials of Business Analytics
<b>2</b>	EB-302	Text, Social Media& Web Analytics
<b>3</b>	EB-303	Predictive Analytics
<b>4</b>	EB-304	Big Data Analytics
<b>5</b>	EB-305	Marketing Analytics

**IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EB-401	Financial Analytics
<b>7</b>	EB-402	HR Analytics
<b>8</b>	EB-403	Econometrics and Business Forecasting
<b>9</b>	EB-404	Data Warehousing and OLAP
<b>10</b>	EB-405	Data Mining& Machine learning



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**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**



**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	<b>Program Core-1</b> Mathematical Foundations of Computer Science	PC	3	0	0	3	
2	MTCSE1102	<b>Program Core-2</b> Advanced Data Structures & Algorithms	PC	3	0	0	3	
3	MTCSE1103	<b>Program Elective-1</b> 1. Big Data Analytics 2. Digital Image Processing 3. Advanced Operating Systems	PE	3	0	0	3	
4	MTCSE1104	<b>Program Elective-2</b> 1. Advanced Computer Networks 2. Internet of Things 3. Object Oriented Software Engineering	PE	3	0	0	3	
5	MTCSE1105	<b>Research Methodology and IPR</b>	CC			0	2	
6	MTCSE1106	<b>Laboratory-1</b> Advanced Data Structures & Algorithms Lab	LB	0	0	4	2	
7	MTCSE1107	<b>Laboratory-2</b> Advanced Computing Lab	LB	0	0	4	2	
8	MTCSE1108	<b>Audit Course-1*</b>	AC	2	0	0	0	
<b>Total Credits</b>								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	<b>Program Core-3</b> Machine learning	PC	3	0	0	3	
2	MTCSE1202	<b>Program Core-4</b> MEAN Stack Technologies	PC	3	0	0	3	
3	MTCSE1203	<b>Program Elective-3</b> 1. Advanced Databases and Mining 2. Ad Hoc & Sensor Networks 3. Soft Computing	PE	3	0	0	3	
4	MTCSE1204	<b>Program Elective-4</b> 1. Cloud Computing 2. Principles of computer security 3. High Performance Computing	PE	3	0	0	3	
5	MTCSE1205	<b>Laboratory-3</b> Machine Learning with python lab	LB	0	0	4	2	
6	MTCSE1206	<b>Laboratory-4</b> MEAN Stack Technologies Lab	LB	0	0	4	2	
7	MTCSE1207	<b>Mini Project with Seminar</b>	MP	2	0	0	2	
8	MTCSE1208	<b>Audit Course-2 *</b>	AC	2	0	0	0	
<b>Total Credits</b>								18

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

**Audit Course 1 & 2:**

1. English for Research Paper

5. Constitution of India



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- |                                     |  |
|-------------------------------------|--|
| Writing                             | 6. Pedagogy Studies  |
| 2. Disaster Management              | 7. Stress Management by Yoga                                 |
| 3. Sanskrit for Technical Knowledge | 8. Personality Development through Life Enlightenment Skills |
| 4. Value Education                  |  |

**III-SEMESTER**

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCSE2101	<b>Program Elective-5</b> 1. Deep Learning 2. Social Network Analysis 3. MOOCs-1 (NPTEL/SWAYAM) 12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTCSE2102	<b>Open Elective</b> 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTCSE2103	<b>Dissertation-I/ Industrial Project #</b>	PJ	0	0	20	10
<b>Total Credits</b>							16

*#Students going for Industrial Project/Thesis will complete these courses through MOOCs*

<b>M. Tech. (CSE) IV SEMESTER</b>							
S.No	Course Code	Courses	Category	L	T	P	C
1	MTCSE2201	<b>Dissertation-II</b>	PJ	0	0	32	16
<b>Total Credits</b>							16

**Open Electives offered by the Department of CSE**

1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Machine Learning
5. Digital forensics
6. Next Generation Databases



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

**DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**

**COURSE STRUCTURE & SYLLABUS for  
M.Tech EEE Common for**

- I. Power Electronics (PE)
- II. Power and Industrial Drives (P&ID)
- III. Power Electronics and Electrical Drives (PE &ED)
- IV. Power Electronics and Drives (PE&D)
- V. Power Electronics and systems (PE&S)
- VI. Electrical Machines and Drives (EM&D)

**Programme**

*(Applicable for batches admitted from 2019-2020)*



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

**COURSE STRUCTURE**

**I Semester**

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Electrical Machine Modeling and Analysis		3	0	0	3	100
2		PC	Analysis of Power Electronic Converters		3	0	0	3	100
3		PE	<b>Elective – I</b> i. Modern Control Theory ii. Power Quality and Custom Power Devices iii. Programmable Logic Controllers & Applications		3	0	0	3	100
4		PE	<b>Elective – II</b> i. Artificial Intelligence Techniques ii. Renewable Energy Technologies iii. HVDC Transmission and Flexible AC Transmission Systems		3	0	0	3	100
5			Research Methodology and IPR		2	0	0	2	100
6			Power Electronics Simulation Laboratory		0	0	4	2	100
7			Power Converters Laboratory		0	0	4	2	100
8			Audit Course – 1		2	0	0	0	100
					16	0	8	18	800

**II Semester**

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Switched Mode Power Conversion		3	0	0	3	100
2		PC	Power Electronic Control of Electrical Drives		3	0	0	3	100
3		PE	<b>Elective – III</b> i. Control & Integration of Renewable Energy Systems ii. Hybrid Electric Vehicles iii. Digital Control Systems		3	0	0	3	100
4		PE	<b>Elective – IV</b> i. Advanced Digital Signal Processing ii. Applications of Power Converters iii. Microcontrollers		3	0	0	3	100
5			Electric Drives Simulation Laboratory		0	0	4	2	100
6			Electric Drives Laboratory		0	0	4	2	100
7			Mini Project with Seminar		0	0	4	2	100
8			Audit Course – 2		2	0	0	0	100
					14	0	12	18	800



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**III Semester**

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PE	<b>Program Elective – V</b> i. Digital Signal Processing Controlled Drives ii. Smart Grid Technologies iii. Modeling & Simulation of Power Electronic Systems		3	0	0	3	100
2		OE	<b>Open Elective</b> i. Industrial Safety ii. Energy Audit, Conservation & Management iii. Composite Materials		3	0	0	3	100
3			Dissertation Phase - I <b>(to be continued and evaluated next semester)</b>		0	0	20	10	---
					6	0	20	16	200

**IV Semester**

S.No	Course No	Category	Course Name	T	P	C	Marks
1			Dissertation Phase-II <b>(continued from III semester)</b>	0	32	16	100
				0	32	16	100

**Audit course 1 & 2**

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.





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

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**COURSE STRUCTURE & SYLLABUS M.Tech ECE Common for**  
Systems & Signal Processing (SSP)  
Digital Image Processing (DIP)  
**Programme**  
*(Applicable for batches admitted from 2019-2020)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**

## I Semester

S. No.	Course Type/ Code	Course Name	Teaching Scheme			Credits
			L	T	P	
1	Core 1	Advanced Digital Signal Processing	3	0	0	3
2	Core 2	Digital Image and Video Processing	3	0	0	3
3	Prog. Specific Elective	<b>Elective I</b> a. DSP Architectures b. Statistical Signal Processing c. Cognitive Radio	3	0	0	3
4	Prog. Specific Elective	<b>Elective II</b> a. Adaptive Signal Processing b. Computer Vision c. Coding Theory & Applications	3	0	0	3
5	Lab 1	Advanced Digital Signal Processing Lab	0	0	4	2
6	Lab2	Digital Image and Video Processing Lab	0	0	4	2
7	MC	Research Methodology and IPR	2	0	0	2
8	Aud 1	Audit Course 1	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

## II Semester

S. No.	Course Type/ Code	Name of the Subject	Teaching Scheme			Credits
			L	T	P	
1	Core 3	Pattern Recognition and Machine Learning	3	0	0	3
2	Core 4	Detection and Estimation Theory	3	0	0	3
3	Prog. Specific Elective	<b>Elective III</b> a. IOT and Applications b. Wireless Sensors Networks c. Soft Computing Techniques	3	0	0	3
4	Prog. Specific Elective	<b>Elective IV</b> a. Audio/Vedio coding and compression b. Biomedical Signal Processing c. Optical Networks	3	0	0	3
5	Lab 1	Pattern Recognition and Machine Learning Lab	0	0	4	2
6	Lab2	Detection and Estimation Theory Lab	0	0	4	2
7	MP	Mini Project (Seminar)	0	0	4	2
8	Aud 2	Audit Course 2	2	0	0	0
<b>Total</b>			<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>

### III Semester

S. No.	Course Type/Code	Subject	Teaching Scheme			Credits
			L	T	P	
1	Prog. Specific Elective	<b>Elective-V</b> a. Optimization Techniques b. Modeling and Simulation Techniques c. Artificial Intelligence	3	0	0	3
2	<b>Open Elective</b>	a. Business Analytics b. Industrial Safety c. Operations Research d. Cost Management of Engineering Projects e. Composite Materials f. Waste to Energy	3	0	0	3
3	Dissertation	Dissertation Phase – I	0	0	20	10
<b>Total</b>			<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>

### IV Semester

S. No.	Course Code	Subject	Teaching Scheme			Credits
			L	T	P	
1	Dissertation	Dissertation Phase – II	--	--	32	16
<b>Total</b>			<b>--</b>	<b>--</b>	<b>32</b>	<b>16</b>

#### Audit course 1 & 2

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

**ACADEMIC REGULATIONS  
COURSE STRUCTURE  
AND  
DETAILED SYLLABUS**

**For**

**MASTER OF BUSINESS ADMINISTRATION**



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## Course Structure MBA (Regular) 2013-2014

(Effective for the students admitted into first year from the academic year 2013-2014)

### I SEMESTER

Subject	Title	Marks	Credits
1	Management Theory & Organization Behavior	100	3
2	Managerial Economics	100	3
3	Accounting for Managers	100	3
4	Managerial Communication & Soft Skills	100	3
5	Business Environment	100	3
6	Quantitative Analysis for Business Decision	100	3
7	IT – LAB	100	2

### SEMESTER - II

Subject	Title	Marks	Credits
1	Financial Management	100	3
2	Human Resource Management	100	3
3	Marketing Management	100	3
4	Production and Operations Management	100	3
5	Business Research Methods	100	3
6	Business Ethics and Corporate Governance	100	3
7	Mini Project+Seminar on Mini Project	50+50	2+2

### SEMESTER - III

Subject	Title	Marks	Credits
1	Strategic Management	100	3
2	Legal Aspects of Business	100	3
3	Retail Management	100	3
4	Elective –I	100	3
5	Elective –II	100	3
6	Elective –I	100	3
7	Elective –II	100	3

## Master of Business Administration

### SEMESTER - IV

Subject	Title	Marks	Credits
1	Logistic and Supply Chain Management	100	3
2	Entrepreneurship Development	100	3
3	Elective –III	100	3
4	Elective –IV	100	3
5	Elective –III	100	3
6	Elective – IV	100	3
7	Major Project & Comprehensive Viva	Grade	8
	<b>Total Marks / Credits</b>	<b>2700</b>	<b>90</b>

#### Dual Electives:

The elective papers will be offered in the areas of Marketing, Finance, Human Resource Management (HRM), and Systems. The students should choose any **Two** of the following **elective areas** in the beginning of the third semester of MBA. Specialization will be offered subject to a minimum of 20 students.

#### Marketing (Elective-I)

- I. Product Management
- II. Promotion and Distribution Management
- III. Services Marketing
- IV. Consumer Behavior

#### Finance (Elective-II)

- I. Investment Management
- II. Banking and Insurance
- III. International Financial Management
- IV. Financial Risk Management

#### HRM (Elective-III)

- I. Compensation and Performance Management
- II. Management of Industrial Relations
- III. Global Human Resource Management
- IV. Management of Change and Development

#### Systems (Elective-IV)

- I. E-Business
- II. Enterprise Resource Planning
- III. Information Systems Audit & Control
- IV. Software Project Management



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**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
		<b>Total Credits</b>				<b>20</b>

**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
		<b>Total Credits</b>				<b>22</b>



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**DEPARTMENT OF CIVIL ENGINEERING**

**IV YEAR: I- SEMESTER**

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC701	Design & Drawing of Steel Structures	3	0	0	3
2	PC702	Geotechnical Engineering - II	3	0	0	3
3	PC703	Remote Sensing & GIS	3	0	0	3
4	PE701	Program Elective – III	3	0	0	3
5	OE701	Open Elective – III	3	0	0	3
6	PC704	Remote Sensing & GIS Lab	0	0	3	1.5
7	PC705	Geotechnical Engineering Lab	0	0	3	1.5
8	PR701	Industrial Training/ Internship or Seminar	0	0	3	1
9	PR702	Project Work Phase-I	0	0	4	2
<b>Total Credits</b>						<b>21</b>

**IV YEAR: II- SEMESTER**

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC801	Estimation Specifications and Contract	3	0	0	3
2	PE801	Program Elective - IV	3	0	0	3
3	PE802	Program Elective – V	3	0	0	3
4	PR801	Project Work Phase-II	0	0	16	8
<b>Total Credits</b>						<b>17</b>





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**DEPARTMENT OF CIVIL ENGINEERING**

<b>Open Electives</b>	<b>Professional Elective-I</b>	<b>Professional Elective-II</b>	<b>Professional Elective-III</b>	<b>Professional Elective-IV</b>	<b>Professional Elective-V</b>
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 and 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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**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	<b>Professional Elective- I</b> 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	<b>Employability Skills -II*</b>	2	0	0	0
Total			17	0	8	19
<b>*Internal Evaluation through Seminar / Test for 50 marks</b>						

**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	<b>Professional Elective -II</b> (NPTEL/SWAYAM) <b>Duration: 12 Weeks Minimum</b> <b>*Course/subject title can't be repeated</b>	3	0	0	3
5	OE3201	<b>Open Elective- I</b> (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	<b>Industrial Training / Skill Development Programmes / Research Project in higher learning institutes</b>	0	0	0	1
Total			18	0	4	21



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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**IV Year – I SEMESTER**

S.No	Course Code	Courses	L	T	P	Credits
1	CS4101	Cryptography and Network Security	3	0	0	3
2	CS4102	UML & Design Patterns	3	0	0	3
3	CS4103	Machine Learning	3	0	0	3
4	OE4101	<b>Open Elective -II (Inter Disciplinary)</b>	3	0	0	3
5	PE4101	<b>Professional Elective- III</b> 1. Mobile Computing 2. Data Science 3. NoSQL Databases 4. Internet of Things 5. Software Project Management	3	0	0	3
6	PE4102	<b>Professional Elective- IV</b> 1. Web Services 2. Cloud Computing 3. Mean Stack Technologies 4. Ad-hoc and Sensor Networks 5. Cyber Security & Forensics	3	0	0	3
7	CS4104	UML Lab #	0	0	2	1
8	PR4101	<b>Project- I</b>	0	0	0	2
9	MC4101	<b>IPR &amp; Patents</b>	3	0	0	0
<b>Total</b>			21	0	2	21
# Relevant theory to be taught in the lab						

**IV Year – II SEMESTER**

S.No	Course Code	Courses	L	T	P	Credits
1	HS4201	Management and Organizational Behavior	3	0	0	3
2	OE4201	<b>Open Elective- III (Inter Disciplinary)</b>	3	0	0	3
3	PE4201	<b>Professional Elective-V</b> 1. Deep Learning 2. Quantum Computing 3. DevOps 4. Blockchain Technologies 5. Big Data Analytics	3	0	0	3
4	PR4201	<b>Project- II</b>	0	0	0	7
<b>Total</b>			9	0	0	16



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

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Open Electives to be offered by CSE for Other Branches:**

<b>Open Elective I:</b> <ol style="list-style-type: none"><li>1. Data Structures</li><li>2. Java Programming</li><li>3. Data Base Management Systems</li><li>4. C++ Programming</li><li>5. Operating Systems</li><li>6. Internet of Things</li></ol>	<b>Open Elective II:</b> <ol style="list-style-type: none"><li>1. Problem Solving using Python</li><li>2. Web Technologies</li><li>3. Machine Learning</li><li>4. Distributed Computing</li><li>5. AI Tools &amp; Techniques</li><li>6. Data Science</li></ol>
<b>Open Elective III:</b> <ol style="list-style-type: none"><li>1. Big Data</li><li>2. Image Processing</li><li>3. Mobile Application Development</li><li>4. Cyber Security</li><li>5. Deep Learning</li><li>6. Blockchain Technologies</li></ol>	



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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

### 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			<b>21</b>

### 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			<b>21</b>



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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			<b>21</b>

### 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			<b>15</b>
			<b>Total</b>			<b>160</b>



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



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





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

### COURSE STRUCTURE-R19

#### IV Year – I SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Switchgear & Protection	EE	3	--	--	3
2		OOPs through JAVA	ES	3	--	--	3
3		Renewable Energy Systems	EE	3	--	--	3
4		<b>Elective – II</b>	EL	3	--	--	3
5		<b>Elective - III</b>	EL	3	--	--	3
6		Linear & Digital IC Applications Laboratory	ES	--	--	2	1
7		Power Systems& Simulation Laboratory	EE	--	--	2	1
		<b>Industrial Training /Skill Development Programmes / Research Project</b>	Project	--	--	2	1
8		<b>Project-I</b>	Project			4	2
<b>Total Credits</b>				<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>

#### IV Year – II SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Power System Operation & Control	EE	3	--	--	3
2		<b>Open Elective - II</b>	OE	3	--	--	3
3		<b>Elective - IV</b>	EL	3	--	--	3
4		<b>Project-II</b>	Project	--	--	16	8
<b>Total Credits</b>				<b>09</b>		<b>16</b>	<b>17</b>

BS – Basic Sciences

HS – Humanity Sciences

ES – Engineering Sciences

EE – Electrical Engineering

OE – Open Elective

EL – Elective

Proj- Project

MC–Mandatory Course



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

**COURSE STRUCTURE-R19**

**Elective – I:**

1. Digital IC Applications
2. Communication Systems
3. Computer Networks
4. Internet of Things applications to Electrical Engineering
5. VLSI Design
6. Cloud Computing

**Elective – II:**

1. Utilization of Electrical Energy
2. Data Base Management System
3. Advanced Control Systems
4. Electrical Machine Design
5. Hybrid Electric Vehicles
6. Swayam Course

**Elective – III:**

1. Operating Systems
2. Neural Networks & Fuzzy Logic
3. High Voltage Engineering
4. Energy Auditing and Demand Side Management
5. Data Analytics with Python
6. Swayam Course

**Elective – IV:**

1. Electrical Distribution Systems
2. HVAC & DC Transmission
3. Flexible Alternating Current Transmission Systems
4. Power Quality
5. Smart Grid
6. Special Electrical Machines



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

**COURSE STRUCTURE-R19**

**Open Electives offered by EEE Department for Other Branches( Except for EEE Branch)**

**Open Elective-I:**

1. Renewable Energy Sources
2. Essentials of Analog and Digital Electronics
3. Electrical Estimation and Costing
4. Power Electronic Devices & Circuits
5. Fundamentals of Electrical Machines

**Open Elective-II:**

1. Measurements & Instrumentation
2. Fundamentals of Utilization of Electrical Energy
3. Concepts of Power System Engineering
4. Basics of Control Systems
5. Energy Audit

# **COURSE STRUCTURE AND SYLLABUS**

**For**

## **CIVIL ENGINEERING**

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



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

### III Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Management Science	4	--	--	3
2	Engineering Geology	4	--	--	3
3	Structural Analysis -II	4	--	--	3
4	Design & Drawing of Reinforced Concrete Structures	4	2	--	3
5	Transportation Engineering - II	4	--	--	3
6	Concrete Technology Lab	--	--	3	2
7	Geology Lab	--	--	3	2
8	Transportation Engineering Lab	--	--	3	2
<b>Total Credits</b>					<b>21</b>

### III Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Design & Drawing of Steel Structures	4	2	--	3
2	Geotechnical Engineering - I	4	--	--	3
3	Environmental Engineering -I	4	--	--	3
4	Water Resource Engineering -I	4	--	--	3
5	<b>OPEN ELECTIVE</b>	4	--	--	3
	i. Electronic Instrumentation				
	ii. Data Base Management Systems				
	iii. Alternative Energy Sources				
	iv. Waste water Management				
	v. Fundamentals of Liquefied Natural Gas				
vi. Green Fuel Technologies					
6	Geotechnical Engineering Lab	--	--	3	2
7	Environmental Engineering Lab	--	--	3	2
8	Computer Aided Engineering Lab	--	--	3	2
<b>Total Credits</b>					<b>21</b>

### 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	<b>Elective I</b> i. Finite Element Methods ii. Ground Improvement Techniques iii. Air Pollution & Control iv. Urban Hydrology v. Traffic Engineering	4	--	--	3
6	<b>Elective II</b> 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
<b>Total Credits</b>					<b>22</b>

### 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	<b>Elective III</b> 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	<b>Seminar</b> on Internship Project	--	3	--	2
6	<b>Project</b>	--	--	--	10
<b>Total Credits</b>					<b>24</b>

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

# **COURSE STRUCTURE AND SYLLABUS**

**For**

## **COMPUTER SCIENCE AND ENGINEERING**

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



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

### III Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Compiler Design	4	--	--	3
2	Unix Programming	4	--	--	3
3	Object Oriented Analysis and Design using UML	4	--	--	3
4	Database Management Systems	4	--	--	3
5	Operating Systems	4	--	--	3
6	Unified Modeling Lab	--	--	3	2
7	Operating System & Linux Programming Lab	--	--	3	2
8	Database Management System Lab	--	--	3	2
MC	Professional Ethics & Human Values	--	3	--	--
<b>Total Credits</b>					<b>21</b>

### III Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Computer Networks	4	2	--	3
2	Data Warehousing and Mining	4	--	--	3
3	Design and Analysis of Algorithms	4	--	--	3
4	Software Testing Methodologies	4	--	--	3
5	<b>Open Elective:</b> i. Artificial Intelligence ii. Internet of Things iii. Cyber Security iv. Digital Signal Processing v. Embedded Systems vi. Robotics	4	--	--	3
6	Network Programming Lab	--	--	3	2
7	Software Testing Lab	--	--	3	2
8	Data Warehousing and Mining Lab	--	--	3	2
9	IPR & Patents	--	2	--	--
<b>Total Credits</b>					<b>21</b>



### 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	<b>Elective-I</b> i. Big Data Analytics ii. Information Retrieval Systems iii. Mobile Computing	4	--	--	3
6	<b>Elective-II</b> 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
<b>Total Credits</b>					<b>22</b>

### 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	<b>Elective-III</b> i. Concurrent and Parallel Programming ii. Artificial Neural Networks iii. Operations Research	4	--	--	3
5	<b>Seminar</b>	--	3	--	2
6	<b>Project</b>	--	--	--	10
<b>Total Credits</b>					<b>24</b>

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

# **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**

### 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	--	--
<b>Total Credits</b>					<b>21</b>

### 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	<b>OPEN ELECTIVE</b> 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	--	--
<b>Total Credits</b>					<b>21</b>

#### 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	<b>Elective I</b> 1. TV Engineering 2. Electronic Switching Systems 3. System Design through Verilog	4	--	--	3
6	<b>Elective II</b> 1.Embedded Systems 2. Analog IC Design 3.Network Security & Cryptography	4	--	--	3
7	Micro Wave Engineering & Optical Lab	--	--	2	2
8	Digital Signal Processing Lab	--	--	2	2
<b>Total Credits</b>					<b>22</b>

#### 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	<b>Elective III</b> 1.Wireless sensors & Networks 2. Digital IC Design 3. Operating Systems	4	--	--	3
5	<b>Seminar</b>	--	3	--	2
6	<b>Project</b>	--	--	--	10
<b>Total Credits</b>					<b>24</b>

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

# **COURSE STRUCTURE AND SYLLABUS**

**For**

## **ELECTRICAL AND ELECTRONICS ENGINEERING**

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



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

### III Year – I Semester

S. No	Subjects	L	T	P	Credits
1	Power Systems-II	4	--	--	3
2	Renewable Energy Sources	4	--	--	3
3	Signals and Systems	4	--	--	3
4	Pulse & Digital Circuits	4	--	--	3
5	Power Electronics	4	--	--	3
6	Electrical Machines-II Laboratory	--	--	3	2
7	Control Systems Laboratory	--	--	3	2
8	Electrical Measurements Laboratory	--	--	3	2
9-MC	IPR & Patents	--	2	--	--
<b>Total Credits</b>					<b>21</b>

### III Year – II Semester

S. No	Subjects	L	T	P	Credits
1	Power Electronic Controllers & Drives	4	--	--	3
2	Power System Analysis	4	--	--	3
3	Micro Processors and Micro controllers	4	--	--	3
4	Data Structures	4	--	--	3
5	<b>Open Elective</b> 1. Unix and Shell Programming 2. OOPS Through JAVA 3. VLSI Design 4. Robotics 5. Neural Networks & Fuzzy Logic 6. Energy Audit and Conservation & Management	4	--	--	3
6	Power Electronics Laboratory	--	--	3	2
7	Microprocessors & Microcontrollers Laboratory	--	--	3	2
8	Data Structures Laboratory	--	--	3	2
9-MC	Professional Ethics & Human Values	--	3	--	--
<b>Total Credits</b>					<b>21</b>

#### 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	<b>Elective – I:</b> 1. Electrical Machine Modeling and Analysis 2. Advanced Control Systems 3. Programmable Logic Controllers & Applications 4. Instrumentation	4	--	--	3
6	<b>Elective – II:</b> 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
<b>Total Credits</b>					<b>22</b>

#### 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	<b>Elective – III:</b> 1. High Voltage Engineering 2. Flexible Alternating Current Transmission Systems 3. Power System Reforms	4	--	--	3
5	<b>Seminar</b>	--	3	--	2
6	<b>Project</b>	--	--	--	10
<b>Total Credits</b>					<b>24</b>

**II Year – II SEMESTER**

S. No.	Subject	T	P	Credits
1	Building Planning & Drawing	3+1*	--	3
2	Managerial Economics and Financial Analysis	3+1*	--	3
3	Strength of Materials- II	3+1*	--	3
4	Hydraulics and Hydraulic Machinery	3+1*	--	3
5	Concrete Technology	3+1*	--	3
6	Structural Analysis - I	3+1*	--	3
7	Fluid Mechanics and Hydraulic Machinery Lab	--	3	2
8	Concrete Technology Lab	--	3	2
9	Surveying Field work-II	--	3	2
<b>Total Credits</b>				<b>24</b>

**III Year – I SEMESTER**

S. No.	Subject	T	P	Credits
1	Engineering Geology	3+1*	--	3
2	Structural Analysis – II	3+1*	--	3
3	Design and Drawing of Reinforced Concrete Structures	3+1*	--	3
4	Geotechnical Engineering – I	3+1*	--	3
5	Transportation Engineering – I	3+1*	--	3
6	IPR & Patents	3+1*	--	2
7	Geotechnical Engineering Lab	--	3	2
8	Engineering Geology Lab	--	3	2
<b>Total Credits</b>				<b>21</b>

**III Year – II SEMESTER**

S. No.	Subject	T	P	Credits
1	Design and Drawing of Steel Structures	3+1*	--	3
2	Geotechnical Engineering – II	3+1*	--	3
3	Water Resources Engineering-I	3+1*	--	3
4	Environmental Engineering – I	3+1*	--	3
5	Transportation Engineering – II	3+1*	--	3
6	<b>OPEN ELECTIVE</b>	3+1*	--	3
7	Computer Aided Engineering Drawing	--	3	2
8	Transportation Engineering Lab	--	3	2
<b>Total Credits</b>				<b>22</b>



**IV Year – I SEMESTER**

S. No.	Subject	T	P	Credits
1	Environmental Engineering – II	3+1*	--	3
2	Prestressed Concrete	3+1*	--	3
3	Construction Technology and Management	3+1*	--	3
4	Water Resources Engineering–II	3+1*	--	3
5	Remote Sensing and GIS Applications	3+1*	--	3
6	<b>ELECTIVE - I</b>	3+1*	--	3
7	Environmental Engineering Lab	--	3	2
8	GIS & CAD Lab	--	3	2
<b>Total Credits</b>				<b>22</b>

**IV Year – II SEMESTER**

S. No.	Subject	T	P	Credits
1	Estimating, Specifications & Contracts	3+1*	--	3
2	<b>ELECTIVE – II</b>	3+1*	--	3
3	<b>ELECTIVE – III</b>	3+1*	--	3
4	<b>ELECTIVE – IV</b>	3+1*	--	3
5	Project Work			9
<b>Total Credits</b>				<b>21</b>

**OPEN ELECTIVE:**

- a) Environmental Pollution and Control
- b) Disaster Management
- c) Industrial Water & Waste Water Management
- d) Architecture and Town Planning
- e) Finite Element Method
- f) Green Technologies

**Elective-I:**

- a) Ground Improvement Techniques
- b) Air Pollution and Control
- c) Matrix methods of Structural Analysis
- d) Urban Hydrology
- e) Advanced Surveying
- f) Interior Designs and Decorations

**Elective-II:**

- a. Engineering with Geo-synthetics
- b. Environmental Impact Assessment and Management
- c. Advanced Structural Engineering
- d. Ground Water Development and Management
- e. Traffic Engineering
- f. Infrastructure Management

**Elective-III:**

- a) Advanced foundation Engineering
- b) Solid waste Management
- c) Earthquake Resistant Design
- d) Water Shed Management
- e) Pavement Analysis and Design
- f) Green Buildings

**Elective-IV:**

- a) Soil Dynamics and Machine Foundations
- b) Environmental and Industrial Hygiene
- c) Repair and Rehabilitation of Structures
- d) Water Resources System Planning and Management
- e) Urban Transportation Planning
- f) Safety Engineering
- g) Bridge Engineering

# ACADEMIC REGULATIONS COURSE STRUCTURE AND DETAILED SYLLABUS

**COMPUTER  
SCIENCE AND  
ENGINEERING**

**For**

COMPUTER SCIENCE AND ENGINEERING FOUR DEGREE COURSE

*(Applicable for batches admitted from 2013-2014)*



## II Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Probability and statistics	4	--	3
2	Java Programming	4	--	3
3	Advanced Data Structures	4	--	3
4	Computer Organization	4	--	3
5	Formal Languages and Automata Theory	4	--	3
6	Advanced Data Structures Lab	--	3	2
7	Java Programming Lab	--	3	2
8	Free Open Source Software(FOSS) Lab	--	3	2
<b>Total Credits</b>				<b>21</b>

## III Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Compiler Design	4	-	3
2	Data Communication	4	-	3
3	Principles of Programming Languages	4	-	3
4	Database Management Systems	4	-	3
5	Operating Systems	4	-	3
6	Compiler Design Lab	-	3	2
7	Operating System Lab	-	3	2
8	Database Management Systems Lab		3	2
9	Linux Programming Lab	-	3	2
10	IPR and Patents- 1	2	-	-
11	Seminar	--	--	1
<b>Total Credits</b>				<b>24</b>

## III Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Computer Networks	4	-	3
2	Data Ware housing and Mining	4	-	3
3	Design and Analysis of Algorithms	4	-	3
4	Software Engineering	4	-	3
5	Web Technologies	4	-	3
6	Computer Networks Lab	-	3	2
7	Software Engineering Lab	-	3	2
8	Web Technologies Lab	-	3	2
9	IPR and Patents- II	2	--	--
<b>Total Credits</b>				<b>21</b>

## IV Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Cryptography and Network Security	4	-	3
2	UML & Design Patterns	4	-	3
3	Mobile Computing	4	-	3
4	<b>Elective –I</b>	4	-	3
5	<b>Elective – II</b>	4	-	3
6	UML & Design Patterns Lab	-	3	2
7	Mobile Application Development Lab	-	3	2

8	Software Testing Lab	-	3	2
9	Hadoop & BigData Lab	-	3	2
<b>Total Credits</b>				<b>23</b>

#### IV Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	<b>Elective – III</b>	4	-	3
2	<b>Elective – IV</b>	4	-	3
3	Distributed Systems	4	-	3
4	Management Science	4	-	3
5	Project	-	-	9
<b>Total Credits</b>				<b>21</b>

#### **Elective – I:**

- i) Software Testing Methodologies
- ii) Simulation Modeling
- iii) Information Retrieval Systems
- iv) Artificial Intelligence
- v) Multimedia Computing
- vi) High Performance Computing

#### **Elective – II:**

- i. Digital Forensics
- ii. Hadoop and Big Data
- iii. Software Project Management
- iv. Machine Learning
- v. Advanced Databases

#### **Elective – III:**

- i) Human Computer Interaction
- ii) Advanced Operating Systems
- iii) Mobile Adhoc & Sensor Networks
- iv) Pattern Recognition
- v) Digital Image Processing
- vi) Micro processors and Multi Core Systems

#### **Elective-IV:**

- i) Embedded and Real Time Systems
- ii) Neural Networks & Soft Computing
- iii) Social Networks and the Semantic Web
- iv) Cloud Computing

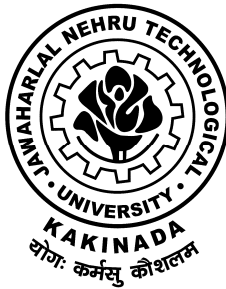
**ACADEMIC REGULATIONS  
COURSE STRUCTURE  
AND  
DETAILED SYLLABUS**

**ELECTRONICS &  
COMMUNICATION  
ENGINEERING**

**For**

**B.Tech., FOUR YEAR DEGREE COURSE**

(Applicable for the batches admitted from 2013-14)



**JAWAHARLAL NEHRU TECHNOLOGICAL  
UNIVERSITY KAKINADA  
KAKINADA – 533003, ANDHRA PRADESH, INDIA.**

**III Year – I SEMESTER**

S. No.	Subject	T	P	Credits
1	Pulse & Digital Circuits	3+1	-	3
2	Linear IC Applications	3+1	-	3
3	Control Systems	3+1	-	3
4	Digital System Design & Digital IC Applications	3+1	-	3
5	Antennas and Wave Propagation	3+1	-	3
6	Pulse & Digital Circuits Lab		3	2
7	LIC Applications Lab	-	3	2
8	Digital System Design & DICA Lab		3	2
9	IPR& Patents	3		2
<b>Total Credits</b>				<b>23</b>

**III Year – II SEMESTER**

S. No.	Subject	T	P	Credits
1	Microprocessors and Microcontrollers	3+1	-	3
2	Digital Signal Processing	3+1	-	3
3	Digital Communications	3+1	-	3
4	Microwave Engineering	3+1	-	3
5	<b>Open Elective</b>	3+1	-	3
6	Microprocessors and Microcontrollers Lab	-	3	2
7	Digital Communications Lab	-	3	2
8	Digital Signal Processing Lab		3	2
9	<b>Seminar</b>		2	1
<b>Total Credits</b>				<b>22</b>

**IV Year – I SEMESTER**

S. No.	Subject	T	P	Credits
1	VLSI Design	3+1	-	3
2	Computer Networks	3+1	-	3
3	Digital Image Processing	3+1	-	3
4	Computer Architecture & Organization	3+1	-	3
5	<b>Elective – I</b> 1. Electronic Switching Systems 2. Analog IC Design 3. Object Oriented Programming & O S 4. Radar Systems 5. Advanced Computer Architecture	3+1	-	3
6	<b>Elective – II</b> 1. Optical Communication 2. Digital IC Design 3. Speech Processing 4. Artificial Neural Network & Fuzzy Logic 5. Network Security & Cryptography	3+1	-	3
7	V L S I Lab	-	3	2
8	Microwave Engineering Lab	-	3	2
<b>Total Credits</b>				<b>22</b>

**IV Year – II SEMESTER**

S. No.	Subject	T	P	Credits
1	Cellular Mobile Communication	3+1		3
2	Electronic Measurements and Instrumentation	3+1		3
3	<b>Elective III</b> 1. Satellite Communication 2. Mixed signal Design 3. Embedded systems 4. RF Circuit Design 5. Cloud Computing	3+1		3
4	<b>Elective IV</b> 1. Wireless Sensors and Networks 2. System on Chip 3. Low Power IC Design 4. Bio-Medical Instrumentation 5. EMI/EMC	3+1		3
5	<b>Project &amp; Seminar</b>			9
<b>Total Credits</b>				<b>21</b>



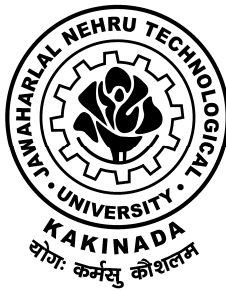
**ACADEMIC REGULATIONS  
COURSE STRUCTURE  
AND  
DETAILED SYLLABUS**

**ELECTRICAL AND  
ELECTRONICS  
ENGINEERING**

**For**

**B.Tech., FOUR YEAR DEGREE COURSE**

(Applicable for the batches admitted from 2013-14)



**JAWAHARLAL NEHRU TECHNOLOGICAL  
UNIVERSITY KAKINADA  
KAKINADA – 533003, ANDHRA PRADESH, INDIA.**

2	Microprocessors & Microcontrollers	3+1	--	3
3	Utilization of Electrical Energy	3+1	--	3
4	Power System Analysis	3+1	--	3
5	Power Semiconductor Drives	3+1	--	3
6	Management Science	3+1	--	3
7	Power Electronics Lab	--	3	2
8	Electrical Measurements Lab	--	3	2
<b>Total Credits</b>				<b>22</b>

#### IV Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Renewable Energy Sources and Systems	3+1	-	3
2	HVAC & DC Transmission	3+1	-	3
3	Power System Operation & Control	3+1	-	3
4	<b>Open Elective</b>	3+1	-	3
5	<b>Elective – I</b>	3+1	-	3
6	Microprocessors & Microcontrollers Lab	-	3	2
7	Electrical Simulation Lab	-	3	2
8	Power systems lab		3	2
<b>Total Credits</b>				<b>21</b>

#### IV Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Digital Control Systems	3+1	-	3
2	<b>Elective – II</b>	3+1	-	3
3	<b>Elective – III</b>	3+1	-	3
4	<b>Elective – IV</b>	3+1	-	3
5	Project	-	-	9
<b>Total Credits</b>				<b>21</b>

#### **Open Elective:**

1. Energy Audit, Conservation and Management
2. Instrumentation
3. Non Conventional Sources of Energy
4. Optimization Techniques

**Elective – I:**

1. VLSI Design
2. Electrical Distribution Systems
3. Optimization Techniques

**Elective – II:**

1. Advanced Control Systems
2. Extra High Voltage Transmission
3. Special Electrical Machines

**Elective – III:**

1. Electric Power Quality
2. Digital Signal Processing
3. FACTS: Flexible Alternating Current Transmission Systems.

**Elective-IV:**

1. OOPS Through Java
2. UNIX and Shell Programming
3. AI Techniques
4. Power System Reforms
5. Systems Engineering