

## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.TECH. ELECTRICAL AND ELECTRONICS ENGINEERING  
III YEAR COURSE STRUCTURE & SYLLABUS (R16)

Applicable From 2016-17 Admitted Batch

## III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE501PC	Electrical Measurements & Instrumentation	4	1	0	4
2	EE502PC	Power Systems - II	4	1	0	4
3	EI503PC	Microprocessors and Microcontrollers	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective - I	3	0	0	3
6	EE505PC	Electrical Measurements & Instrumentation Lab	0	0	3	2
7	EE506PC	Basic Electrical simulation Lab	0	0	3	2
8	EI507PC	Microprocessors and Microcontrollers Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		<b>Total Credits</b>	<b>21</b>	<b>3</b>	<b>9</b>	<b>24</b>

## III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE601PC	Power Systems Analysis	4	1	0	4
2	EE602PC	Power Electronics	4	1	0	4
3	EE603PC	Switch Gear and Protection	4	1	0	4
4		Open Elective - II	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	EE604PC	Power Systems Lab	0	0	3	2
7	EE605PC	Power Electronics Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		<b>Total Credits</b>	<b>18</b>	<b>3</b>	<b>9</b>	<b>24</b>

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

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Nachupally (Kongareddy), Kodumuru (M)  
Jagtial (Dist)-505 501 Telangana

**Professional Elective - I (PE - I):**

EM611PE	Computer Organization
EE612PE	Linear Systems Analysis
EE613PE	Linear and Digital IC Applications
EE614PE	Electrical and Electronics Instrumentation

\***Open Elective** subjects' syllabus is provided in a separate document.

\***Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

**Ex:** - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

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Jagtial (Dist)-508 501 Telangana

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**B.TECH. ELECTRICAL AND ELECTRONICS ENGINEERING**  
**IV YEAR COURSE STRUCTURE & SYLLABUS (R16)**

Applicable From 2016-17 Admitted Batch

**IV YEAR I SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE701PC	Power Semiconductor Drives	4	1	0	4
2	EE702PC	Power System Operation and control	4	1	0	4
3		Professional Elective - II	3	0	0	3
4		Professional Elective - III	3	0	0	3
5		Professional Elective - IV	3	0	0	3
6	EE703PC	Electrical Systems Simulation Lab	0	0	3	2
7	EE704PC	Electrical Workshop	0	0	3	2
8	EE705PC	Industry Oriented Mini Project	0	0	3	2
9	EE706PC	Seminar	0	0	2	1
		<b>Total Credits</b>	<b>17</b>	<b>2</b>	<b>11</b>	<b>24</b>

**IV YEAR II SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1		Open Elective - III	3	0	0	3
2		Professional Elective-V	3	0	0	3
3		Professional Elective-VI	3	0	0	3
4	EE801PC	Major Project	0	0	30	15
		<b>Total Credits</b>	<b>9</b>	<b>0</b>	<b>30</b>	<b>24</b>

**Professional Elective - I (PE - I):**

EM611PE	Computer Organization
EE612PE	Linear Systems Analysis
EE613PE	Linear and Digital IC Applications
EE614PE	Electrical and Electronics Instrumentation

**Professional Elective - II (PE - II):**

EE721PE	Digital Signal Processing
EE722PE	HVDC Transmission
ET721PE	Switch Mode Power Supplies
EE724PE	Reliability Engineering

  
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**Professional Elective - III (PE - III):**

EE731PE	Digital Control Systems
EE732PE	Power Quality
EE733PE	Modern Power Electronics
EE734PE	Optimization Techniques

**Professional Elective - IV (PE-IV):**

EE741PE	Programmable Logic Controllers
EE742PE	EHV AC Transmission Systems
EE743PE	Flexible A.C. Transmission Systems
EE744PE	Special Machines

**Professional Elective - V (PE-V):**

EE851PE	Artificial Neural Networks and Fuzzy Systems
EE852PE	Electrical Distribution Systems
EE853PE	Wind, Solar and Hybrid Energy Systems
EE854PE	High Voltage Engineering

**Professional Elective - VI (PE-VI):**

EE861PE	VLSI Design
EE862PE	Smart Electric Grid
EE863PE	Utilization of Electric Power
EE864PE	Electric and Hybrid Vehicles

\*Open Elective subjects' syllabus is provided in a separate document.

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## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.TECH. MECHANICAL ENGINEERING  
III YEAR COURSE STRUCTURE & SYLLABUS (R16)

Applicable From 2016-17 Admitted Batch

## III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME501PC	Design of Machine Members - I	4	1	0	4
2	ME502PC	Thermal Engineering-I	4	1	0	4
3	ME503PC	Metrology and Machine Tools	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective – I	3	0	0	3
6	ME505PC	Thermal Engineering Lab	0	0	3	2
7	ME506PC	Machine Tools Lab	0	0	3	2
8	ME507PC	Engineering Metrology Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		<b>Total Credits</b>	<b>21</b>	<b>3</b>	<b>9</b>	<b>24</b>

## III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME601PC	Thermal Engineering –II	4	1	0	4
2	ME602PC	Design of Machine Members-II	4	1	0	4
3	ME603PC	Heat Transfer	4	1	0	4
4		Open Elective - II	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	ME604PC	Heat Transfer Lab	0	0	3	2
7	ME605PC	CADD and MATLAB	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		<b>Total Credits</b>	<b>18</b>	<b>3</b>	<b>9</b>	<b>24</b>

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

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Jagtial (Dist-505 501) Telangana

**Professional Elective - I**

ME611PE	Finite Element Methods
ME612PE	Refrigeration and Air Conditioning
ME613PE	Machine Tool Design
ME614PE	IC Engines and Gas Turbines

\***Open Elective** subjects' syllabus is provided in a separate document.

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## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.TECH. MECHANICAL ENGINEERING  
IV YEAR COURSE STRUCTURE & SYLLABUS (R16)

Applicable From 2016-17 Admitted Batch

## IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME701PC	CAD/CAM	4	0	0	4
2	ME702PC	Instrumentation and Control System	4	0	0	4
3		Professional Elective - II	3	0	0	3
4		Professional Elective - III	3	0	0	3
5		Professional Elective - IV	3	0	0	3
6	ME703PC	CAD/CAM Lab	0	0	3	2
7	ME704PC	Instrumentation and Control Systems Lab	0	0	3	2
8	ME705PC	Industry Oriented Mini Project	0	0	3	2
9	ME706PC	Seminar	0	0	2	1
		<b>Total Credits</b>	<b>17</b>	<b>0</b>	<b>11</b>	<b>24</b>

## IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	-	Open Elective – III	3	0	0	3
2		Professional Elective - V	3	0	0	3
3		Professional Elective - VI	3	0	0	3
4	ME801PC	Major Project	0	0	30	15
		<b>Total Credits</b>	<b>9</b>	<b>0</b>	<b>30</b>	<b>24</b>

## Professional Elective - I

ME611PE	Finite Element Methods
ME612PE	Refrigeration and Air Conditioning
ME613PE	Machine Tool Design
ME614PE	IC Engines and Gas Turbines

## Professional Elective - II

ME721PE	Composite materials
ME722PE	Industrial Management
ME723PE	Power Plant Engineering
ME724PE	Operations Research

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**Professional Elective - III**

ME731PE	Engineering Tribology
ME732PE	Computational Fluid Dynamics
ME733PE	Robotics
ME734PE	CNC Technology

**Professional Elective - IV**

ME741PE	Mechanical Vibrations
ME742PE	Turbo Machines
ME743PE	MEMS
ME744PE	Additive Manufacturing Technology

**Professional Elective - V**

ME851PE	Automation in Manufacturing
ME852PE	Fluid Power System
ME853PE	Renewable Energy Sources
ME854PE	Production Planning and Control

**Professional Elective - VI**

ME861PE	Automobile Engineering
ME862PE	Advanced Mechanics of Solids
ME863PE	Unconventional Machining Processes
ME864PE	Advanced Materials Technology

\***Open Elective** subjects' syllabus is provided in a separate document.

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## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.TECH. ELECTRONICS AND COMMUNICATION ENGINEERING III  
YEAR COURSE STRUCTURE & SYLLABUS (R16)

Applicable From 2016-17 Admitted Batch

## III YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	EC501PC	Electromagnetic Theory and Transmission Lines	4	1	0	4
2	EC502PC	Linear and Digital IC Applications	4	0	0	4
3	EC503PC	Digital Communications	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective – I	3	0	0	3
6	EC505PC	Linear IC Applications Lab	0	0	3	2
7	EC506PC	Digital IC Applications Lab	0	0	3	2
8	EC507PC	Digital Communications Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		<b>Total Credits</b>	<b>21</b>	<b>2</b>	<b>9</b>	<b>24</b>

## III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective-II	3	0	0	3
2		Professional Elective-I	3	0	0	3
3	EC601PC	Antennas and Wave Propagation	4	0	0	4
4	EC602PC	Microprocessors and Microcontrollers	4	0	0	4
5	EC603PC	Digital Signal Processing	4	0	0	4
6	EC604PC	Digital Signal Processing Lab	0	0	3	2
7	EC605PC	Microprocessors and Microcontrollers Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		<b>Total Credits</b>	<b>18</b>	<b>0</b>	<b>9</b>	<b>24</b>

During Summer Vacation between III and IV Years: Industry Oriented Mini Project  
Professional Elective – I

EC611PE	Computer organization and operating system
EC612PE	Digital Image Processing
EC613PE	Spread Spectrum Communications
EC614PE	Digital system Design

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**IV YEAR I SEMESTER**

R16 B.TECH ECE.

S.No.	Course Code	Course Title	L	T	P	Credits
1	EC701PC	Microwave Engineering	4	0	0	4
2		Professional Elective - II	3	0	0	3
3		Professional Elective - III	3	0	0	3
4		Professional Elective - IV	3	0	0	3
5	EC702PC	VLSI Design	4	0	0	4
6	EC703PC	VLSI and E-CAD Lab	0	0	3	2
7	EC704PC	Microwave Engineering Lab	0	0	3	2
8	EC705PC	Industry Oriented Mini Project	0	0	3	2
9	EC706PC	Seminar	0	0	2	1
		<b>Total Credits</b>	<b>17</b>	<b>0</b>	<b>11</b>	<b>24</b>

**IV YEAR II SEMESTER**

S.No.	Course Code	Course Title	L	T	P	Credits
1		Open Elective – III	3	0	0	3
2		Professional Elective - V	3	0	0	3
3		Professional Elective - VI	3	0	0	3
4	EC801PC	Major Project	0	0	30	15
		<b>Total Credits</b>	<b>9</b>	<b>0</b>	<b>30</b>	<b>24</b>

**Professional Elective – I**

EC611PE	Computer Organization and Operating System
EC612PE	Digital Image Processing
EC613PE	Spread Spectrum Communications
EC614PE	Digital system Design

**Professional Elective – II**

EC721PE	Computer Networks
EC722PE	FPGA Programming
EC723PE	Coding Theory and Techniques
EC724PE	Soft Computing Techniques

  
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**Professional Elective – III**

EC731PE	Wireless Communications and Networks
EC732PE	Internet of Things
EC733PE	Radar Systems
EC734PE	Embedded Sytem Design

**Professional Elective – IV**

EC741PE	Optimization Techniques
EC742PE	Object Oriented Programming
EC743PE	Electronic Measurements and Instrumentation
EC744PE	Artificial Intelligence

**Professional Elective – V**

EC851PE	Network Security and Cryptography
EC852PE	System Design Using FPGAs
EC853PE	Optical Communications
EC854PE	Machine Learning

**Professional Elective – VI**

EC861PE	Actuators and Robot Systems
EC862PE	Analog CMOS IC Design
EC863PE	Global Positioning System
EC864PE	Computer Vision

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Jagtial (Dist)-505 501 Telangana

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B.TECH. COMPUTER SCIENCE AND  
ENGINEERING III YEAR COURSE STRUCTURE &  
SYLLABUS (R16)**

Applicable From 2016-17 Admitted  
Batch


**III YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Design and Analysis of Algorithms	4	0	0	4
2	CS502PC	Data Communication and Computer Networks	4	0	0	4
3	CS503PC	Software Engineering	4	0	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective –I	3	0	0	3
6	CS505PC	Design and Analysis of Algorithms Lab	0	0	3	2
7	CS506PC	Computer Networks Lab	0	0	3	2
8	CS507PC	Software Engineering Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		<b>Total Credits</b>	<b>21</b>	<b>0</b>	<b>9</b>	<b>24</b>

**III YEAR II SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Compiler Design	4	0	0	4
2	CS602PC	Web Technologies	4	0	0	4
3	CS603PC	Cryptography and Network Security	4	0	0	4
4		Open Elective-II	3	0	0	3
5		Professional Elective-I	3	0	0	3
6	CS604PC	Cryptography and Network Security Lab	0	0	3	2
7	CS605PC	Web Technologies Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		<b>Total Credits</b>	<b>18</b>	<b>0</b>	<b>9</b>	<b>24</b>

**During Summer Vacation between III and IV Years: Industry Oriented Mini Project**

  
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 Jagtial (Dist)-505 501 Telangana

**Professional Elective – I**

CS611PE	Mobile Computing
CS612PE	Design Patterns
CS613PE	Artificial Intelligence
CS614PE	Information Security Management (Security Analyst -
CS615PE	I) Introduction to Analytics (Associate Analytics - I)

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#### IV YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS701PC	Data Mining	4	0	0	4
2	CS702PC	Principles of Programming Languages	4	0	0	4
3		Professional Elective – II	3	0	0	3
4		Professional Elective – III	3	0	0	3
5		Professional Elective – IV	3	0	0	3
6	CS703PC	Data Mining Lab	0	0	3	2
7		PE-II Lab #	0	0	3	2
	CS751PC	Python Programming Lab				
	CS752PC	Mobile Application Development Lab				
	CS753PC	Web Scripting Languages Lab				
	CS754PC	Internet of Things Lab				
8	CS705PC	Industry Oriented Mini Project	0	0	3	2
9	CS706PC	Seminar	0	0	2	1
		<b>Total Credits</b>	<b>17</b>	<b>0</b>	<b>11</b>	<b>24</b>

# Courses in PE - II and PE - II Lab must be in 1-1 correspondence.

#### IV YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective – III	3	0	0	3
2		Professional Elective – V	3	0	0	3
3		Professional Elective – VI	3	0	0	3
4	CS801PC	Major Project	0	0	30	15
		<b>Total Credits</b>	<b>9</b>	<b>0</b>	<b>30</b>	<b>24</b>

#### Professional Elective – I

CS611PE	Mobile Computing
CS612PE	Design Patterns
CS613PE	Artificial Intelligence
CS614PE	Information Security Management (Security Analyst - I)
CS615PE	Introduction to Analytics (Associate Analytics - I)

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**Professional Elective - II**

CS721PE	Python Programming
CS722PE	Mobile Application Development
CS723PE	Web Scripting Languages
CS724PE	Internet of Things

**Professional Elective - III**

CS731PE	Graph Theory
CS732PE	Distributed Systems
CS733PE	Machine Learning
CS734PE	Software Process and Project Management

**Professional Elective - IV**

CS741PE	Computational Complexity
CS742PE	Cloud Computing
CS743PE	Blockchain Technology
CS744PE	Social Network Analysis

**Professional Elective - V**

CS851PE	Information Theory & Coding
CS852PE	Real-Time Systems
CS853PE	Data Analytics
CS854PE	Modern Software Engineering

**Professional Elective - VI**

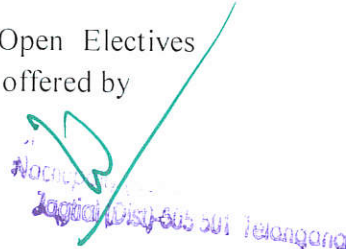
CS861PE	Advanced Algorithms
CS862PE	Web Services and Service Oriented Architecture
CS863PE	Computer Forensics
CS864PE	Neural Networks and Deep Learning

\***Open Elective** subjects' syllabus is provided in a separate document.

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.TECH. INFORMATION TECHNOLOGY  
III YEAR COURSE STRUCTURE & SYLLABUS (R16)

Applicable From 2016-17 Admitted Batch

III YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Design and Analysis of Algorithms	4	0	0	4
2	CS502PC	Data Communication and Computer Networks	4	0	0	4
3	CS503PC	Software Engineering	4	0	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective –I	3	0	0	3
6	CS505PC	Design and Analysis of Algorithms Lab	0	0	3	2
7	CS506PC	Computer Networks Lab	0	0	3	2
8	CS507PC	Software Engineering Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		<b>Total Credits</b>	<b>21</b>	<b>0</b>	<b>9</b>	<b>24</b>

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Compiler Design	4	0	0	4
2	CS602PC	Web Technologies	4	0	0	4
3	CS603PC	Cryptography and Network Security	4	0	0	4
4		Open Elective-II	3	0	0	3
5		Professional Elective-I	3	0	0	3
6	CS604PC	Cryptography and Network Security Lab	0	0	3	2
7	CS605PC	Web Technologies Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		<b>Total Credits</b>	<b>18</b>	<b>0</b>	<b>9</b>	<b>24</b>

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

  
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JNTUH College of Engineering Jagtial  
Nachupally (Kondapur H., Kadapa Dist.)  
Jagtial (Dist)-505 501, Telangana



**Professional Elective – I**

CS611PE	Mobile Computing
IT612PE	Object Oriented Analysis and Design
IT613PE	Computer Forensics
CS614PE	Information Security Management (Security Analyst - I)
CS615PE	Introduction to Analytics (Associate Analytics - I)

\*Open Elective subjects' syllabus is provided in a separate document.

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## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.TECH. INFORMATION TECHNOLOGY  
IV YEAR COURSE STRUCTURE & SYLLABUS (R16)

Applicable From 2016-17 Admitted Batch

## IV YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS701PC	Data Mining	4	0	0	4
2	IT702PC	Android Application Development	4	0	0	4
3		Professional Elective – II	3	0	0	3
4		Professional Elective – III	3	0	0	3
5		Professional Elective – IV	3	0	0	3
6	IT703PC	Android Application Development Lab	0	0	3	2
7		PE-II Lab #	0	0	3	2
	CS751PC	Python Programming Lab				
	CS753PC	Web Scripting Languages Lab				
	IT752PC	Ethical Hacking Lab				
	CS754PC	Internet of Things Lab				
8	IT705PC	Industry Oriented Mini Project	0	0	3	2
9	IT706PC	Seminar	0	0	2	1
		<b>Total Credits</b>	<b>17</b>	<b>0</b>	<b>11</b>	<b>24</b>

# Courses in PE - II and PE - II Lab must be in 1-1 correspondence.

## IV YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective – III	3	0	0	3
2		Professional Elective – V	3	0	0	3
3		Professional Elective – VI	3	0	0	3
4	IT801PC	Major Project	0	0	30	15
		<b>Total Credits</b>	<b>9</b>	<b>0</b>	<b>30</b>	<b>24</b>

## Professional Elective – I

CS611PE	Mobile Computing
IT612PE	Object Oriented Analysis and Design
IT613PE	Computer Forensics
CS614PE	Information Security Management (Security Analyst - I)
CS615PE	Introduction to Analytics (Associate Analytics - I)

PRINCIPAL  
JNTUH College of Engineering Jagtial  
Nachupally (Kondagattu), Kodimmal(M)  
Jagtial (Dist)-505 501 Telangana

**Professional Elective - II #**

CS721PE	Python Programming
CS723PE	Web Scripting Languages
IT722PE	Ethical Hacking
CS724PE	Internet of Things

**Professional Elective - III**

IT731PE	Web and Database Security
IT732PE	Embedded Systems
IT733PE	Artificial Intelligence
CS734PE	Software Process and Project Management

**Professional Elective - IV**

CS743PE	Blockchain Technology
CS742PE	Cloud Computing
CS744PE	Social Network Analysis
IT741PE	Information Retrieval Systems

**Professional Elective - V**

IT851PE	Steganography and Watermarking
CS852PE	Real-Time Systems
CS853PE	Data Analytics
CS854PE	Modern Software Engineering

**Professional Elective - VI**

IT861PE	Intrusion Detection System
IT862PE	ADHOC and Sensor Networks
CS864PE	Neural Networks and Deep Learning
IT863PE	Human Computer Interaction

\***Open Elective** subjects' syllabus is provided in a separate document.

\***Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

**Ex:** - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

PRINCIPAL  
 JNTUH College of Engineering Jagtial  
 Nachupally (Kondagattu), Kodimala  
 Jagtial (Dist)-505 501 Telangana

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. TECH. (ELECTRICAL POWER SYSTEMS/ POWER SYSTEM CONTROL AND AUTOMATION/  
ELECTRICAL POWER ENGINEERING)

EFFECTIVE FROM ACADEMIC YEAR 2017- 18 ADMITTED BATCH

COURSE STRUCTURE AND SYLLABUS

I Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-1	Advanced Power System Analysis	25	75	4	0	0	4
PC-2	Advanced Power System Protection	25	75	4	0	0	4
PC-3	Modern Control Theory	25	75	4	0	0	4
PE-1	1. EHV AC Transmission 2. High Voltage Engineering 3. Advanced Digital Signal Processing	25	75	3	0	0	3
PE-2	1. Power Quality 2. Microcontrollers and applications 3. Distribution Automation	25	75	3	0	0	3
OE-1	*Open Elective – I	25	75	3	0	0	3
Laboratory I	Power & Energy Systems Lab - I	25	75	0	0	3	2
Seminar I	Seminar – I	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

II Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-4	Power System Dynamics and Control	25	75	4	0	0	4
PC-5	Flexible AC Transmission Systems (FACTS)	25	75	4	0	0	4
PC-6	Power System Operation and Deregulation	25	75	4	0	0	4
PE-3	1. Gas Insulated Systems(GIS) 2. Programmable Logic Controllers and applications 3. Energy Auditing Conservation and Management	25	75	3	0	0	3
PE4	1. Reactive Power Compensation and Management 2. Power System Reliability 3. Voltage Stability	25	75	3	0	0	3
OE-2	*Open Elective – II	25	75	3	0	0	3
Laboratory II	Power and Energy Systems Lab - II	25	75	0	0	3	2
Seminar II	Seminar –II	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

PRINCIPAL  
NTUH College of Engineering Jagtial  
Nachupally (Kondagota), Kodimal(M)  
Jagtial (Dist)-505 501 Telangana



### III Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Technical Paper Writing	100	0	0	3	0	2
Comprehensive Viva-Voce	0	100	0	0	0	4
Project work Review II	100	0	0	0	22	8
<b>Total</b>	<b>200</b>	<b>100</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>14</b>

### IV Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Project work Review III	100	0	0	0	24	8
Project Evaluation (Viva-Voce)	0	100	0	0	0	16
<b>Total</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>

\*Open Elective subjects must be chosen from the list of open electives offered by OTHER departments.

# For Project review I, please refer 7.10 in R17 Academic Regulations.

PRINCIPAL  
JNTUH College of Engineering Jagtial  
Nachupally (Kondagaon), Kodimalam  
Jagtial (Dist)-505 501, Telangana



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech in ENGINEERING DESIGN.  
Effective from Academic Year 2017- 18 admitted batch

COURSE STRUCTURE AND SYLLABUS

I Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-1	Advanced Mechanics of Solids	25	75	4	0	0	4
PC-2	Advanced Mechanics of Machinery	25	75	4	0	0	4
PC-3	Vibration Analysis of Mechanical Systems	25	75	4	0	0	4
PE-1	1. Computer Simulation of Machines 2. Design Optimization 3. Theory of Elasticity	25	75	3	0	0	3
PE-2	1. Advanced Mechanics of Composite Materials 2. Mechanics of Metal Forming 3. Design for Manufacturing & Assembly	25	75	3	0	0	3
OE-1	*Open Elective - I	25	75	3	0	0	3
Laboratory I	Kinematics & Dynamics Lab	25	75	0	0	3	2
Seminar I	Seminar-I	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

II Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-4	Experimental Stress Analysis	25	75	4	0	0	4
PC-5	Advanced Finite Element Analysis	25	75	4	0	0	4
PC-6	Mechanical Behavior of Engineering Materials	25	75	4	0	0	4
PE-3	1. Industrial Robotics 2. Engineering Design 3. Fuzzy logic & Neural Networks	25	75	3	0	0	3
PE4	1. Vehicle Dynamics 2. Design and Analysis of Experiments 3. Structural Health monitoring	25	75	3	0	0	3
OE-2	*Open Elective - II	25	75	3	0	0	3
Laboratory II	Computer Aided Testing . Analysis & Modelling Lab	25	75	0	0	3	2
Seminar II	Seminar-II	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

JNTUH College of Engineering Jagtial  
Vachupally (Kandamguda), Kodumuri(M)  
Jagtial (Dist)-505 501 Telangana

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. TECH IN DIGITAL SYSTEMS & COMPUTER ELECTRONICS.  
EFFECTIVE FROM ACADEMIC YEAR 2017- 18 ADMITTED BATCH

COURSE STRUCTURE AND SYLLABUS

I Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-1	Advanced Digital System Design	25	75	4	0	0	4
PC-2	CMOS VLSI Design	25	75	4	0	0	4
PC-3	Real Time Operating Systems	25	75	4	0	0	4
PE-1	Advanced Data Communications Image and Video Processing Digital Signal Processors and Architectures	25	75	3	0	0	3
PE-2	CPLD and FPGA Architectures and Applications TCP/IP Internetworking Wireless Communications and Networks	25	75	3	0	0	3
OE-1	*Open Elective – I	25	75	3	0	0	3
Laboratory I	Digital System Design Lab	25	75	0	0	3	2
Seminar I	Seminar - I	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

II Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-4	Advanced Computer Architecture	25	75	4	0	0	4
PC-5	Design of Fault Tolerant Systems	25	75	4	0	0	4
PC-6	Embedded System Design	25	75	4	0	0	4
PE-3	Virtual Instrumentation Network Security and Cryptography Scripting Languages	25	75	3	0	0	3
PE4	Verilog Hardware Description Language Adhoc Wireless Networks System On Chip Architectures	25	75	3	0	0	3
OE-2	*Open Elective – II	25	75	3	0	0	3
Laboratory II	Embedded Systems Lab	25	75	0	0	3	2
Seminar II	Seminar - II	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

PRINCIPAL  
JNTUH College of Engineering Jagtial  
Nachupally (Kondagaku), Kodimal(M)  
Jagtial (Dist)-505 501 Telangana

### III Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Technical Paper Writing	100	0	0	3	0	2
Comprehensive Viva-Voce	0	100	0	0	0	4
Project work Review II	100	0	0	0	22	8
<b>Total</b>	<b>200</b>	<b>100</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>14</b>

### IV Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Project work Review III	100	0	0	0	24	8
Project Evaluation (Viva-Voce)	0	100	0	0	0	16
<b>Total</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>

\*Open Elective subjects must be chosen from the list of open electives offered by OTHER departments.

# For Project review I, please refer 7.10 in R17 Academic Regulations.

PRINCIPAL  
JNTUH College of Engineering Jagtial  
Nachupally (Kondagaku), Kodimidi  
Jagtial (Dist)-505 501 Telangana



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech in COMPUTER SCIENCE AND ENGINEERING  
Common to (CS, CSE)

EFFECTIVE FROM ACADEMIC YEAR 2017- 18 ADMITTED BATCH

COURSE STRUCTURE AND SYLLABUS

I Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-1	Advanced Algorithms	25	75	4	0	0	4
PC-2	Computer Networking	25	75	4	0	0	4
PC-3	Software Engineering	25	75	4	0	0	4
PE-1	1. Network Security and Cryptography 2. Mobile Application Development 3. Graph Theory 4. Internet of Things	25	75	3	0	0	3
PE-2	1. Game Theory 2. Parallel and Distributed Algorithms 3. Software Architecture and Design Patterns 4. Embedded Systems	25	75	3	0	0	3
OE-1	*Open Elective – 1	25	75	3	0	0	3
Laboratory I	Advanced Algorithms Lab	25	75	0	0	3	2
Seminar I	Seminar-I	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

II Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-4	Network Programming	25	75	4	0	0	4
PC-5	Distributed Systems and Cloud Computing	25	75	4	0	0	4
PC-6	Theory of Computation	25	75	4	0	0	4
PE-3	1. Data Warehousing and Data Mining 2. Storage Area Networks 3. Semantic Web and Social Networks 4. Cyber Security	25	75	3	0	0	3
PE4	1. Big Data Analytics 2. Soft Computing 3. Software Process and Project Management 4. Machine Learning	25	75	3	0	0	3
OE-2	*Open Elective – 2	25	75	3	0	0	3
Laboratory II	Internet Technologies and Services Lab	25	75	0	0	3	2
Seminar II	Seminar -II	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

PRINCIPAL  
JNTUH College of Engineering Jagtial  
Vachupally (Kondragothu), Kodimal(M)  
Jagtial (Dist)-505 501 Telangana

### III Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Technical Paper Writing	100	0	0	3	0	2
Comprehensive Viva-Voce	0	100	0	0	0	4
Project work Review II	100	0	0	0	22	8
<b>Total</b>	<b>200</b>	<b>100</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>14</b>

### IV Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Project work Review III	100	0	0	0	24	8
Project Evaluation (Viva-Voce)	0	100	0	0	0	16
<b>Total</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>

\*Open Elective subjects must be chosen from the list of open electives offered by OTHER departments.

# For Project review I, please refer 7.10 in R17 Academic Regulations.

NTUH College  
Nachupally (Kothagudem, Kothamangalam)  
Jagtial (Dist)-505 501 Telangana

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech in INFORMATION TECHNOLOGY  
EFFECTIVE FROM ACADEMIC YEAR 2017- 18 ADMITTED BATCH

COURSE STRUCTURE AND SYLLABUS

I Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-1	Advanced Algorithms	25	75	4	0	0	4
PC-2	Database Internals	25	75	4	0	0	4
PC-3	Internet of Things	25	75	4	0	0	4
PE-1	1. Multimedia and Rich Internet Applications 2. Software Architecture and Design Patterns 3. Parallel and Distributed Algorithms 4. Cryptography and Network Security	25	75	3	0	0	3
PE-2	1. Computer Networking 2. Big Data Analytics 3. Soft Computing 4. Information Retrieval Systems	25	75	3	0	0	3
OE-1	*Open Elective – 1	25	75	3	0	0	3
Laboratory I	Internet of Things Lab	25	75	0	0	3	2
Seminar I	Seminar-I	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

II Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
PC-4	Mobile Application Development	25	75	4	0	0	4
PC-5	Machine Learning with R	25	75	4	0	0	4
PC-6	Software Engineering	25	75	4	0	0	4
PE-3	1. Information Security And Audit 2. Internet Technologies and Services 3. Semantic Web and Social Networks 4. Embedded Systems	25	75	3	0	0	3
PE4	1. E- Commerce 2. Software Quality Assurance and Testing 3. Cloud Computing and Distributed Computing 4. Cyber Security and Forensics	25	75	3	0	0	3
OE-2	*Open Elective – 2	25	75	3	0	0	3
Laboratory II	Android Application Development Lab and R Programming Lab	25	75	0	0	3	2
Seminar II	Seminar -II	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>



### III Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Technical Paper Writing	100	0	0	3	0	2
Comprehensive Viva-Voce	0	100	0	0	0	4
Project work Review II	100	0	0	0	22	8
<b>Total</b>	<b>200</b>	<b>100</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>14</b>

### IV Semester

Course Title	Int. marks	Ext. marks	L	T	P	C
Project work Review III	100	0	0	0	24	8
Project Evaluation (Viva-Voce)	0	100	0	0	0	16
<b>Total</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>

\*Open Elective subjects must be chosen from the list of open electives offered by OTHER departments.

# For Project review I, please refer 7.10 in R17 Academic Regulations.

PRINCIPAL  
JNTUH College of Engineering Jagtla  
Nachupally (Kondagadda), Kodimial(M  
Jagtla (Dist)-505 501 Telangana

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M. TECH. ELECTRICAL POWER ENGINEERING/ ELECTRICAL POWER SYSTEMS**  
**EFFECTIVE FROM ACADEMIC YEAR 2019- 20 ADMITTED BATCH**

**R19 COURSE STRUCTURE AND SYLLABUS**

**I Year I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Power System Analysis	3	0	0	3
Professional Core - II	Economic Operation of Power Systems	3	0	0	3
Professional Elective - I	1. HVDC Transmission 2. Renewable Energy Systems 3. Smart Grid Technologies 4. Modern Control Theory	3	0	0	3
Professional Elective - II	1. Electrical Power Distribution System 2. Reactive Power Compensation and Management 3. Mathematical Methods for Power Engineering 4. Hybrid Electric Vehicles	3	0	0	3
	Research Methodology and IPR	2	0	0	2
Lab - I	Power Systems Computation Lab-I	0	0	4	2
Lab - II	Advanced Power Systems Lab	0	0	4	2
Audit - I	Audit Course - I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

**I Year II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Digital Protection of Power System	3	0	0	3
Professional Core - IV	Power System Dynamics	3	0	0	3
Professional Elective - III	1. Restructured Power Systems 2. EHV AC Transmission 3. Swarm Intelligence Techniques in Power Systems 4. Industrial Load Modelling and Control	3	0	0	3
Professional Elective - IV	1. AI Techniques in Power Systems 2. Power Quality 3. Power Apparatus Design 4. Power System Reliability and Planning	3	0	0	3
	Mini Project with Seminar	0	0	4	2
Lab - III	Power Systems Computation Lab-II	0	0	4	2
Lab - IV	Power System Protection Lab	0	0	4	2
Audit - II	Audit Course - II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>

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 JNTUH College of Engineering Jagtial  
 Nachupally (Kondagattu), Kodimairi (M)  
 Jagtial (Dist)-505 501 Telangana

**II Year I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Power System Transients 2. Flexible AC Transmission Systems 3. Gas Insulated Systems 4. SCADA System and Applications	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review - II	0	0	12	6
	<b>Total</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**II YEAR II - SEMESTER**

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation Work Review - III	0	0	12	6
Dissertation	Dissertation Viva-Voce	0	0	28	14
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>

\*For Dissertation Work Review - I, Please refer 7.8 in R19 Academic Regulations.

**Audit Course I & II:**

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

  
**PRINCIPAL**  
 JNTUH College of Engineering Jagtial  
 Nachupally (Kandamuru), Kodimchal (M)  
 Jagtial (Dist)-505 501, Telangana



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD  
M.TECH. (ENGINEERING DESIGN)**

**EFFECTIVE FROM ACADEMIC YEAR 2019- 20 ADMITTED BATCH**

**R19 COURSE STRUCTURE AND SYLLABUS**

**I Year I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Advanced Mechanics of Solids	3	0	0	3
Professional Core - II	Advanced Mechanics of Machinery	3	0	0	3
Professional Elective - I	1. Theory of Elasticity 2. Advanced Machine Design 3. Random Vibrations	3	0	0	3
Professional Elective - II	1. Design for Manufacturing & Assembly 2. Optimization Techniques & Applications 3. Mechanical Behaviour of Engineering Materials	3	0	0	3
	Research Methodology & IPR	2	0	0	2
Lab - I	Advanced Dynamics Lab	0	0	4	2
Lab - II	Advanced Material Testing Lab	0	0	4	2
Audit - I	Audit Course - I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

**I Year II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Computer Aided Geometric Modelling	3	0	0	3
Professional Core - IV	Advanced Finite Element and Boundary Element Methods	3	0	0	3
Professional Elective - III	1. Vibration Analysis of Mechanical Systems 2. Industrial Robotics 3. Fuzzy Logic and Neural Networks	3	0	0	3
Professional Elective - IV	1. Experimental Stress Analysis 2. Design and Analysis of Experiments 3. Tribology	3	0	0	3
	Mini Project with Seminar	0	0	4	2
Lab - III	Advanced Computer Aided Modelling Lab	0	0	4	2
Lab - IV	Advanced Computer Aided Analysis Lab	0	0	4	2
Audit - II	Audit Course - II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>

**PRINCIPAL**  
JNTUH College of Engineering Jagtla  
Nachupally (Kandaguru), Kodimala (M)  
Jagtla (Dist)-505 501, Telangana

## LIST OF OPEN ELECTIVES OFFERED FOR R19 M.TECH PROGRAMMES

DEPARTMENT OF CIVIL ENGINEERING							
Structural Engineering/ Geotechnical Engineering		Environmental Engineering		Highway Engineering		Transportation Engineering	
1. Numerical methods 2. Construction Management 3. Finite Element Methods 4. Artificial Intelligence: Techniques 5. Operation Research 6. Industrial Safety		1. Environmental Legislation & Audit		1. GIS & IoT For Planning & Policy Making for Smart Cities/Urban Areas 2. Disaster Management		1. Disaster Analytics 2. GIS & IoT For Planning & Policy Making for Smart Cities/Urban Areas	
DEPARTMENT OF MECHANICAL ENGINEERING							
Advanced Manufacturing Systems	CAD/CAM	Design for Manufacturing/Design & Manufacturing	Engineering Design	Machine Design	Mechatronics	Production Engineering	Thermal Engineering
1. Principles of Automation 2. Artificial Neural Networks 3. Fundamentals of Nano Technology	1. Concurrent Engineering 2. Industrial Safety 3. Principles of Automation	1. Principles of Manufacturing Engineering 2. Artificial Neural Networks 3. Fundamentals of Nano Technology	1. Mechanics of Composite Materials 2. Industrial Safety 3. Waste to Energy	1. Concurrent Engineering 2. Industrial Safety 3. Principles of Automation	1. Entrepreneurship 2. Optimization Techniques & Applications 3. Advanced Finite Element and Boundary Element Methods	1. Fundamentals of Production Engineering 2. Non-Destructive Testing & Evaluation 3. Particulate Materials Technology	1. Basics of Refrigeration Systems 2. Introduction to Thermal Storage Systems 3. Cogeneration & Waste Heat Recovery Systems
DEPARTMENT OF CSE/EEE/ECE and Allied Branches							
1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Energy from Waste							

\*Important: \*Open Elective subject must be chosen from the list of open electives offered by OTHER departments.

Ex: A M.Tech ECE student cannot take Open Elective – II offered by ECE Dept, but can select from open electives offered by OTHER departments.



## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.TECH. IN DIGITAL SYSTEMS & COMPUTER ELECTRONICS  
EFFECTIVE FROM ACADEMIC YEAR 2019-20 ADMITTED BATCH

## R19 COURSE STRUCTURE AND SYLLABUS

## I YEAR I – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Digital Systems Design with PLDs	3	0	0	3
Professional Core - II	VLSI Technology and Design	3	0	0	3
Professional Elective - I	1. Embedded System Design 2. CMOS Analog Integrated Circuit Design 3. Advanced Microcontrollers	3	0	0	3
Professional Elective - II	1. Digital Signal Processors and Architectures 2. TCP/IP and ATM Networks 3. Advanced Data Communications	3	0	0	3
Lab - I	Digital System Design Lab	0	0	3	2
Lab - II	Scripting Languages Lab	0	0	3	2
	Research Methodology & IPR	2	0	0	2
Audit - I	Audit Course - I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>6</b>	<b>18</b>

## I YEAR II – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Advanced Computer Architecture	3	0	0	3
Professional Core - IV	Design of Fault Tolerant Systems	3	0	0	3
Professional Elective - III	1. System on Chip Architecture 2. Embedded Software Engineering 3. Embedded Real Time Operating Systems	3	0	0	3
Professional Elective - IV	1. Hardware and Software co-design 2. Low Power VLSI 3. Ad-hoc and Wireless Sensor Networks	3	0	0	3
Lab - III	Embedded Systems Lab	0	0	3	2
Lab - IV	Simulation Lab	0	0	3	2
	Mini project with Seminar	0	0	4	2
Audit - II	Audit Course - II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>10</b>	<b>18</b>

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**II YEAR I – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Embedded Networks 2. Soft Computing Techniques 3. VLSI Signal Processing	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review - II	0	0	12	6
	<b>Total</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**II YEAR II - SEMESTER**

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation Work Review - III	0	0	12	6
Dissertation	Dissertation Viva-Voce	0	0	28	14
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>

\*For Dissertation Work Review - I, Please refer 7.8 in R19 Academic Regulations.

**Audit Course I & II:**

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

PRINCIPAL  
JNTUH College of Engineering Jagtha  
Nachupally (Kondageeru), Kadimatl(M  
Jagthi (Dist)-505 501 Telangana


**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M. Tech. COMPUTER SCIENCE AND ENGINEERING/COMPUTER SCIENCE**  
**EFFECTIVE FROM ACADEMIC YEAR 2019 - 20 ADMITTED BATCH**  
**R19 COURSE STRUCTURE AND SYLLABUS**

**I YEAR I – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Mathematical Foundations of Computer Science	3	0	0	3
Professional Core - II	Advanced Data Structures	3	0	0	3
Professional Elective - I	1. Information Security 2. Mobile Application Development 3. Machine Learning	3	0	0	3
Professional Elective - II	1. Network Security 2. Cloud Computing 3. Data Mining	3	0	0	3
Lab - I	Advanced Data Structures Lab	0	0	4	2
Lab - II	Machine Learning Lab	0	0	4	2
	Research Methodology & IPR	2	0	0	2
Audit - I	Audit Course - I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

**I YEAR II – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Advanced Algorithms	3	0	0	3
Professional Core - IV	Advanced Computer Architecture	3	0	0	3
Professional Elective - III	1. Web and Database Security 2. Internet of Things 3. Data Science	3	0	0	3
Professional Elective - IV	1. Cyber Security 2. Advanced Computer Networks 3. Big Data Analytics	3	0	0	3
Lab - III	Advanced Algorithms Lab	0	0	4	2
Lab - IV	Data Science Lab	0	0	4	2
	Mini Project with Seminar	0	0	4	2
Audit - II	Audit Course - II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>

  
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**II YEAR III – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Digital Forensics 2. High Performance Computing 3. Deep Learning	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review - II	0	0	12	6
	<b>Total</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**II YEAR II - SEMESTER**

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation Work Review - III	0	0	12	6
Dissertation	Dissertation Viva-Voce	0	0	28	14
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>

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**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD  
M.TECH. (ENGINEERING DESIGN)**

**EFFECTIVE FROM ACADEMIC YEAR 2019- 20 ADMITTED BATCH**


**R19 COURSE STRUCTURE AND SYLLABUS**

**I Year I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Advanced Mechanics of Solids	3	0	0	3
Professional Core - II	Advanced Mechanics of Machinery	3	0	0	3
Professional Elective - I	1. Theory of Elasticity 2. Advanced Machine Design 3. Random Vibrations	3	0	0	3
Professional Elective - II	1. Design for Manufacturing & Assembly 2. Optimization Techniques & Applications 3. Mechanical Behaviour of Engineering Materials	3	0	0	3
	Research Methodology & IPR	2	0	0	2
Lab - I	Advanced Dynamics Lab	0	0	4	2
Lab - II	Advanced Material Testing Lab	0	0	4	2
Audit - I	Audit Course - I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

**I Year II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Computer Aided Geometric Modelling	3	0	0	3
Professional Core - IV	Advanced Finite Element and Boundary Element Methods	3	0	0	3
Professional Elective - III	1. Vibration Analysis of Mechanical Systems 2. Industrial Robotics 3. Fuzzy Logic and Neural Networks	3	0	0	3
Professional Elective - IV	1. Experimental Stress Analysis 2. Design and Analysis of Experiments 3. Tribology	3	0	0	3
	Mini Project with Seminar	0	0	4	2
Lab - III	Advanced Computer Aided Modelling Lab	0	0	4	2
Lab - IV	Advanced Computer Aided Analysis Lab	0	0	4	2
Audit - II	Audit Course - II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>

  
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**II Year I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Concurrent Engineering 2. Product Design and Development 3. Microprocessors in Automation	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review - II	0	0	12	6
	<b>Total</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**II YEAR II SEMESTER**

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation Work Review - III	0	0	12	6
Dissertation	Dissertation Viva-Voce	0	0	28	14
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>

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## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

## M. Tech. WEB TECHNOLOGY/ INFORMATION TECHNOLOGY

EFFECTIVE FROM ACADEMIC YEAR 2019 - 20 ADMITTED BATCH

## R19 COURSE STRUCTURE AND SYLLABUS

## I YEAR I – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Mathematical Foundations of Computer Science	3	0	0	3
Professional Core - II	Advanced Data Structures	3	0	0	3
Professional Elective - I	1. Object Oriented Analysis & Design 2. Cloud Computing 3. Python Programming	3	0	0	3
Professional Elective - II	1. Software Project Management 2. Advanced Data Mining 3. Mobile Application Development	3	0	0	3
Lab - I	Advanced Data Structures Lab	0	0	4	2
Lab - II	Python Programming Lab	0	0	4	2
	Research Methodology & IPR	2	0	0	2
Audit - II	Audit Course - I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

## I YEAR II – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Web Technologies	3	0	0	3
Professional Core - IV	Information Security	3	0	0	3
Professional Elective - III	1. Software Testing Methodologies 2. Social, Web & Mobile Analytics 3. Machine Learning	3	0	0	3
Professional Elective - IV	1. Big Data Analytics 2. Information Retrieval 3. Service Oriented Architecture and Microservices	3	0	0	3
Lab - III	Web Technologies Lab	0	0	4	2
Lab - IV	Machine Learning Lab	0	0	4	2
	Mini Project with Seminar	0	0	4	2
Audit - II	Audit Course - II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>



**II YEAR I – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Data Science 2. Internet of Things 3. Blockchain Technology	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review - II	0	0	12	6
	<b>Total</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**II YEAR II - SEMESTER**

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation Work Review - III	0	0	12	6
Dissertation	Dissertation Viva-Voce	0	0	28	14
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>

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