

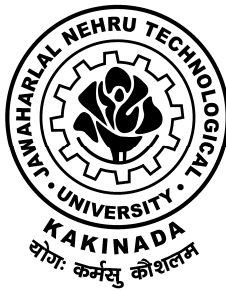
**ACADEMIC REGULATIONS  
COURSE STRUCTURE  
AND  
DETAILED SYLLABUS**

**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.**

## COURSE STRUCTURE

### I Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	English - I	3+1	--	3
2	Mathematics - I	3+1	--	3
3	Mathematics – II (Mathematical Methods)	3+1	--	3
4	Engineering Physics	3+1	--	3
5	Professional Ethics and Human Values	3+1	--	3
6	Engineering Drawing	3+1	--	3
7	English – Communication Skills Lab - I	--	3	2
8	Engineering Physics Laboratory	--	3	2
9	Engineering Physics – Virtual Labs - Assignments	--	2	--
10	Engineering Workshop & IT Workshop	--	3	2
<b>Total Credits</b>				<b>24</b>

### I Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	English – II	3+1	--	3
2	Mathematics – III	3+1	--	3
3	Engineering Chemistry	3+1	--	3
4	Engineering Mechanics	3+1	--	3
5	Electrical Circuit Analysis - I	3+1	--	3
6	Computer Programming	3+1	--	3
7	Engineering Chemistry Lab	--	3	2
8	English – Communication Skills Lab - II	--	3	2
9	C Programming lab	--	3	2
<b>Total Credits</b>				<b>24</b>

### II Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Electrical Circuit Analysis-II	3+1	--	3
2	Thermal and Hydro Prime movers	3+1	--	3
3	Basic Electronics And Devices	3+1	--	3

4	Complex Variables and Statistical Methods	3+1	--	3
5	Electro Magnetic Fields	3+1	--	3
6	Electrical Machines-I	3+1	--	3
7	Thermal and Hydro Lab	--	3	2
8	Electrical Circuits Lab	--	3	2
<b>Total Credits</b>				<b>22</b>

## II Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Environmental studies	3+1	--	3
2	Switching Theory and Logic Design	3+1	--	3
3	Pulse & Digital Circuits	3+1	--	3
4	Power Systems-I	3+1	--	3
5	Electrical Machines-II	3+1	--	3
6	Control Systems	3+1	--	3
7	Electrical Machines -I Lab	--	3	2
8	Electronic Devices & Circuits Lab	--	3	2
<b>Total Credits</b>				<b>22</b>

## III Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Managerial Economics and Financial Analysis	3+1	--	3
2	Electrical Measurements	3+1	--	3
3	Power Systems-II	3+1	--	3
4	Electrical Machines-III	3+1	--	3
5	Power Electronics	3+1	--	3
6	Linear & Digital IC Applications	3+1	--	3
7	Electrical Machines-II Lab	--	3	2
8	Control Systems Lab	--	3	2
9	IPR & Patents	3+1		2
<b>Total Credits</b>				<b>24</b>

## III Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Switchgear and Protection	3+1	--	3

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