

**Indian Institute of Technology Patna**  
**Electrical Engineering Department**

**Dual Degree – Electrical and Electronics Engineering (Power and Control)**

**Course Curriculum**

**Semester-1**

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	CE111	Engineering Drawing	1	0	3	2.5
2	EE101	Electrical Sciences	3	1	0	4
3	HS103	Communicative English for Engineers	2	0.5	1	3
4	MA101	Mathematics-I	3	1	0	4
5	ME110	Workshop	0	0	3	1.5
6	PH103	Physics	3	1	0	4
7	PH110	Physics Laboratory	0	0	3	1.5
		NCC/NSS/NSO	0	0	0	0
		<b>Total</b>	<b>12</b>	<b>3.5</b>	<b>10</b>	<b>20.5</b>

**Semester-2**

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	CH101	Introduction to Chemistry	3	1	0	4
2	CS101	Programming and Data Structure	3	0	0	3
3	CS110	Programming and Data Structure Lab	0	0	3	1.5
4	EE103	Electrical Sciences Lab	0	0	3	1.5
5	MA102	Mathematics-II	3	1	0	4
6	ME102	Engineering Mechanics	3	1	0	4
7	CB102 &	Biology and Environmental Studies	3	0	0	3
	CH110	Chemistry Laboratory	0	0	3	1.5
		NCC/NSS/NSO	0	0	0	0
		<b>Total</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>

### Semester 3

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	EE2nn	Measurements and Instrumentation	3	0	0	3
2	EE2nn	DC Machines and Transformers	3	1	0	4
3	EE201	Digital Electronics and Microprocessor	3	0	0	3
4	EE202	Digital Circuits and Microprocessor Lab	0	0	3	1.5
5	EE221	Signals and Systems	3	0	0	3
6	EE200	Semiconductor Devices	3	0	0	3
7	XX2nn	Open Elective -I	3	0	0	3
		<b>Total</b>	<b>18</b>	<b>1</b>	<b>3</b>	<b>20.5</b>

### Semester 4

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	HS2nn	HSS Elective-I	3	0	0	3
2	MA225	Probability Theory and Random Processes	3	1	0	4
3	EE203	Analog Circuits	3	0	0	3
4	EE204	Analog Circuits Lab	0	0	3	1.5
5	EE205	Network Analysis and Synthesis	3	0	0	3
6	EE2nn	AC Machines and Special Electrical Machines	3	1	0	4
7	EE281	Electric Machines Lab	0	0	3	1.5
		<b>Total</b>	<b>15</b>	<b>2</b>	<b>6</b>	<b>20</b>

### Semester 5

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	XX3nn	Open Elective-II	3	0	0	3
2	EE3nn	Power Electronics	3	0	0	3
3	EE3nn	Power Electronics Laboratory	0	0	3	1.5
4	EE381	Power Systems	3	0	0	3
5	EE3nn	Control Systems -I	3	0	0	3
6	EE3nn	Engineering Electromagnetics	3	0	0	3
7	EE372	Control and Instrumentation Lab	0	0	3	1.5
8	EE3nn	Departmental Elective – I	3	0	0	3
		<b>Total</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>21</b>

### Semester 6

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	HS3nn	HSS Elective-II	3	0	0	3
2	EE3nn	Control Systems - II	3	0	0	3
3	EE3nn	Power System Protection and Switchgear	3	0	0	3
4	EE309	VLSI Design	3	0	0	3
5	EE311	VLSI Lab	0	0	3	1.5
6	EE3nn	Protection and Switchgear Lab	0	0	3	1.5
7	EE3nn	Mathematical Methods for Engineers	3	0	0	3
8	EEenn	Departmental Elective – II	3	0	0	3
		<b>Total</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>21</b>

### Semester 7

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	XX4nn	Open Elective-III	3	0	0	3
2	EEenn	Departmental Elective – III	3	0	0	3
3	EEenn	Departmental Elective - IV	3	0	0	3
4	EEenn	Departmental Elective – V	3	0	0	3
5	EEenn	Departmental Elective - VI	3	0	0	3
6	EEenn	Digital Control	3	0	0	3
7	EEenn	Basics Of Power Electronic Converters	3	0	0	3
		<b>Total</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>21</b>

### Semester 8

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	EEenn	Departmental Elective – VII	3	0	0	3
2	EEenn	Departmental Elective – VIII	3	0	0	3
3	EEenn	Open Elective -III	3	0	0	3
4	EEenn	Minor Project	0	0	0	4
5	EEenn	Power and Control Lab –I	0	0	0	1.5
6	EEenn	A first Course in Optimization	3	0	0	3
7	EEenn	Control of Electric Drives	3	0	0	3
		<b>Total</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>20.5</b>

**Semester 9**

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	EEenn	Project Part - I	0	0	0	10
2	EEenn	Grand Viva	0	0	0	4
3	EEenn	Seminar	4	0	0	4
4	EEenn	Power and Control Lab –II	3	0	0	1.5
		<b>Total</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>19.5</b>

**Semester 10**

Sl. No	Course Code	Course name	Credit Structure			
			L	T	P	C
1	EEenn	Project Part - II	3	0	0	20
		<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>20</b>
		<b>Grand Total</b>	<b>142</b>	<b>9.5</b>	<b>40</b>	<b>206.5</b>

**XX – Department Code****nnn – Course Number**