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DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE OUTCOME

SEMESTER - III

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEC301	ACADEMIC YEAR	2018-19
COURSE NAME	Applied Mathematics-III		
NAME OF FACULTY	PROF. SHIKSHA SINGH		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC301.1		Student will be able to demonstrate basic knowledge of Laplace Transform, Fourier series, Bessel Functions, Vector Algebra and Complex Variable	
EEC301.2		Student will be able to identify and Model the problems of the field of Electrical Engineering and solve it	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEC302	ACADEMIC YEAR	2018-19
COURSE NAME	Electronic Devices and Circuits		
NAME OF FACULTY	PROF. BHUSHAN SAVE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC302.1	**Diode**	Student will be able to Identify the different types of diodes and their applications in electronic circuits	
EEC302.2	**Bipolar Junction Transistor**	Student will be able to analyze the dc and ac parameters of BJT JFET, and differential amplifiers	
EEC302.3	**Field Effect Transistor**	Student will be able to demonstrate and analyze the effects of various parameters on performance of BJT and JFET amplifier.	
EEC302.4	**Feedback Amplifier**	Student will be able to analyze the effects of negative feedback in BJT and JFET amplifiers	
EEC302.5	**Cascade amplifiers**	Student will be able to identify the effects of cascading in BJT and JFET amplifiers	
EEC302.6	**Oscillators**	Student will be able to analyze the different types of oscillators	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEC303	ACADEMIC YEAR	2018-19
COURSE NAME	Conventional and Non-conventional Power Generation		
NAME OF FACULTY	PROF. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC303.1	**Conventional and Non- Conventional sources of energy**	Student will be able to analyse the economics of power generation	
EEC303.2	**Thermal power plant**	Student will be able to illustrate, the operation of thermal power plant	
EEC303.3	**Hydro power plant**	Student will be able to describe, the classification of hydro power plant and significance of hydrograph	
EEC303.4	**Nuclear power plant**	Student will be able to illustrate, the operation of nuclear power plant	
EEC303.5	**Gas turbine and Diesel power plant**	Student will be able to compare the operation of Diesel and Gas Turbine power plant	
EEC303.6	**Power Generation using non-conventional energy sources**	Student will be able to illustrate operation of various Non-Conventional Energy sources	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEC304	ACADEMIC YEAR	2018-19
COURSE NAME	Electrical and Electronics Measurement		
NAME OF FACULTY	PROF. BHAVITA PATIL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC304.1	**Principles of Analog Instruments**	Student will be able to illustrate the working principle of measurement instruments.	
EEC304.2	**Principles of Digital Instruments**	Student will be able to analyse the working of various analog and digital instruments in electrical measurements	
EEC304.3	**Measurement of Resistance**	Student will be able to analyse the concept of extension of range of meters used in electrical measurements	
EEC304.4	**Measurement of Inductance & Capacitance**	Student will be able to analyse the performance of bridges used in electrical measurement process	
EEC304.5	**Potentiometer**	Student will be able to illustrate the need for calibration process in instruments	
EEC304.6	**Transducers**	Student will be able to analyse the performance of transducers involved in electrical measurement	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEC305	ACADEMIC YEAR	2018-19
COURSE NAME	Electrical Machine-I		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC305.1	**Basics of Magnetism**	Student will be able to analyze series parallel magnetic circuits to determine circuit parameters and losses	
EEC305.2	**Electromechanical Energy Conversion**	Student will be able to illustrate principle of energy conversion in single and double excited machines	
EEC305.3	**DC Machines**	Student will be able to understand the performance parameters of dc machines	
EEC305.4	**DC Motor**	Student will be able to analyze the effect of performance parameters and application of dc motors	
EEC305.5	**Testing of DC Motor**	Student will be able to analyze the performance of dc machines by conducting various test	
EEC305.6	**Stepper Motor**	Student will be able to illustrate the principle of operation and applications of stepper motors	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEL301	ACADEMIC YEAR	2018-19
COURSE NAME	Electrical and Electronics Measurement Lab		
NAME OF FACULTY	PROF. BHAVITA PATIL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL301.1		Student will be able to illustrate the working principle of bridges	
EEL301.2		Student will be able to do measurement of various electrical circuit parameters	
EEL301.3		Student will be able to calibrate various electrical measuring instruments	
EEL301.4		Student will be able to illustrate the concept of extension of range of meters used in electrical measurements	
EEL301.5		Student will be able to do the measurement of various process parameters	
EEL301.6		Student will be able to illustrate the working principle of sensors	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEL302	ACADEMIC YEAR	2018-19
COURSE NAME	Object Oriented Programming and Methodology Lab		
NAME OF FACULTY	PROF. DYNANESHWAR BHABAD		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL302.1	**OO Concepts**	Student will be able to apply fundamental programming constructs	
EEL302.2	**Classes, Object and Packages**	Student will be able to illustrate the concept of packages, classes and objects	
EEL302.3	**Array, String and Vector**	Student will be able to elaborate the concept of strings, arrays and vectors	
EEL302.4	**Inheritance and Interface**	Student will be able to implement the concept of inheritance and interfaces	
EEL302.5	**Exception Handling and Multithreading**	Student will be able to implement the notion of exception handling and multithreading	
EEL302.6	**GUI programming in JAVA**	Student will be able to develop GUI based application	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEL303	ACADEMIC YEAR	2018-19
COURSE NAME	Electronics Lab-I		
NAME OF FACULTY	PROF. BHUSHAN SAVE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL302.1		Student will be able to identify the different types of semiconductor devices and demonstrate their applications in electronic circuits	
EEL302.2		Student will be able to determine the dc and ac parameters of semiconductor devices and differential amplifiers	
EEL302.3		Student will be able to analyze the performance of different types of rectifier with and without filter	
EEL302.4		Student will be able to plot frequency response of BJT and JFET amplifier	
EEL302.5		Student will be able to analyze effect of feedback on the performance of amplifier	
EEL302.6		Student will be able to analyze the performance of different type of oscillators	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	III	CLASS	SE
COURSE NO.	EEL304	ACADEMIC YEAR	2018-19
COURSE NAME	Electrical Machine Lab-I		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL304.1		Student will be able to demonstrate different speed control methods of dc motors	
EEL304.2		Student will be able to illustrate and analyze the performance of dc motors	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER - IV

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	IV	CLASS	SE
COURSE NO.	EEC401	ACADEMIC YEAR	2018-19
COURSE NAME	APPLIED MATHEMATICS IV		
NAME OF FACULTY	PROF. SHIKSHA SINGH		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC401.1		Student will be able to develop the proactive approach towards the selection of methods to a solution of engineering problems.	
EEC402.2		Student will be able to identify different probability distribution, learn sampling technique, compute Eigen values & Eigen vectors & evaluate complex integrals & use their application in Electrical Engineering problems.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	IV	CLASS	S.E
COURSE NO.	EEC402	ACADEMIC YEAR	2018-2019
COURSE NAME	Power system -1		
NAME OF FACULTY	Prof. PRAJAKTA PATIL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC402.1	**Introduction**	Student will be able to illustrate the general structure of power system.	
EEC402.2	**Mechanical Design of Overhead lines**	Student will be able to illustrate purpose of different mechanical components of overhead transmission lines.	
EEC402.3	**Transmission Line Parameters**	Student will be able to determine transmission line parameters for different configurations.	
EEC402.4	**Representation of power system components**	Student will be able to analyze the performance of short, medium and Long transmission lines.	
EEC402.5	**Performance of Transmission Line**	Student will be able to analyze the performance of transmission line for different loading conditions.	
EEC402.6	**Underground Cable and Power System Earthing: Underground Cable**	Student will be able to illustrate safety norms and regulations related to underground cables and grounding techniques.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	IV	CLASS	S.E
COURSE NO.	EEC403	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Machine - II		
NAME OF FACULTY	Prof. Kavita Mhaskar		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC403.1	**Single phase Transformer**	Student will be able to illustrate the working principle of single phase and three phase transformer	
EEC403.2	**Autotransformer**	Student will be able to illustrate the working principle of auto-transformer	
EEC403.3	**Three Phase Transformers**	Student will be able to analyse various type of connections of three phase transformer.	
EEC403.4	**Introduction to machine design**	Student will be able to analyse performance of transformer under various operating conditions	
EEC403.5	**Performance measurement of Transformers**	Student will be able to illustrate various design aspects of transformer.	
EEC403.6	**Current Transformers**	Student will be able to analyse the characteristics of CT and VT.	

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SEMESTER	IV	CLASS	SE
COURSE NO.	EEC404	ACADEMIC YEAR	2018-19
COURSE NAME	ELECTROMAGNETIC FIELDS AND WAVES		
NAME OF FACULTY	PROF. BHAVITA PATIL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC404.1	**Vector Basics**	Student will be able to apply knowledge of mathematics & physics in electrical engineering field.	
EEC404.2	**Static Electric Fields**	Student will be able to analyse electrostatics and static magnetic fields.	
EEC404.3	**Static Magnetic Fields**	Student will be able to analyse the effect of material medium on electric & magnetic fields.	
EEC404.4	**Electric and Magnetic Fields in Materials**	Student will be able to analyse & formulate time varying electric & magnetic fields.	
EEC404.5	**Time varying Electric and Magnetic Fields**	Student will be able to analyse wave generation and its propagation in different media.	
EEC404.6	**Wave theory**	Student will be able to analyse static magnetic field & electrostatic field distribution using software tool.	

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SEMESTER	IV	CLASS	S.E
COURSE NO.	EEC405	ACADEMIC YEAR	2018-2019
COURSE NAME	Analog and Digital Integrated Circuits		
NAME OF FACULTY	Prof. Bhushan Save		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC405.1	**Operational Amplifiers: Fundamentals**	Student will be able to illustrate various performance parameters and characteristics of operational amplifier.	
EEC405.2	**Application of Operational Amplifiers**	Student will be able to illustrate various linear and non-linear application of operational amplifiers.	
EEC405.3	**Linear Voltage Regulators**	Student will be able to design and analyse linear voltage regulators and multivibrators.	
EEC405.4	**Logic families**	Student will be able to do various conversion of number systems and illustrate logic families.	
EEC405.5	**Combinational Logic Circuit**	Student will be able to build, design and analyse combinational circuits.	
EEC405.6	**Sequential Logic Circuits**	Student will be able to build, design and analyse sequential circuits.	

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SEMESTER	IV	CLASS	S.E
COURSE NO.	EEC406	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Networks		
NAME OF FACULTY	Prof. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC406.1	**Solution of Network**	Student will be able to analyze electrical network using different Network theorems.	
EEC406.2	**Graph Theory and Network Topology**	Student will be able to analyze electrical network using Graph theory.	
EEC406.3	**First Order and Second Order Differential Equations**	Student will be able to analyze the effect of switching conditions on Electrical networks using Differential equations.	
EEC405.4	**The Laplace Transform**	Student will be able to analyze the effect of switching conditions on Electrical networks using Laplace Transform.	
EEC406.5	**Two port parameters**	Student will be able to develop transfer function model of system using two port network parameters.	
EEC406.6	**Network Functions; Poles and Zeros**	Student will be able to analyze time domain behavior from pole zero plot	

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DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE NO.	EEL401	ACADEMIC YEAR	2018-2019
COURSE NAME	Simulation Lab-I		
NAME OF FACULTY	Prof. Bhavita Patil		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL401.1		Student will be able to simulates electrical circuits for their performance analysis.	
EEL401.2		Student will be able to develop algorithms for electrical circuits for their performance analysis	
EEL401.3		Student will be able to analyze the effect of switching conditions on Electrical networks using Differential equations.	
EEL401.4		Student will be able to develop algorithms for electronic circuits for their performance analysis.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE NO.	EEL402	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Machine Lab-II		
NAME OF FACULTY	Prof. Kavita Mhaskar		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL402.1		Student will be able to demonstrate the working principle of single phase and three phase transformer	
EEL402.2		Student will be able to demonstrate the working principle of auto-transformer	
EEL402.3		Student will be able to analyse various type of connections of three phase transformer.	
EEL402.4		Student will be able to analyse performance of transformer under various operating conditions	
EEL402.5		Student will be able to analyse the characteristics of CT and VT.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE NO.	EEL403	ACADEMIC YEAR	2018-2019
COURSE NAME	Electronics Lab-II		
NAME OF FACULTY	Prof. Bhushan Save.		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL403.1		Student will be able to demonstrate various performance parameters and characteristics of operational amplifier.	
EEL403.2		Student will be able to demonstrate various linear and non-linear application of operational amplifiers	
EEL403.3		Student will be able to build, design, and analyse linear voltage regulators and multi vibrators	
EEL403.4		Student will be able to build, design and analyse combinational circuits	
EEL403.5		Student will be able to build, design and analyse sequential circuits	

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COURSE NO.	EEL404	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Workshop		
NAME OF FACULTY	Prof. Mukeshkumar Mishra		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL404.1	**Introduction of lab equipment's and electrical elements**	Student will be able to demonstrate various electrical and electronic measuring equipment"s.	
EEL404.2	**Introduction to different electronic components**	Student will be able to identify various electrical and power electronic components	
EEL404.3	**Commonly used ICs**	Student will be able to repair and do maintenance of households appliances	
EEL404.4	**Hardware implementation of Electronics circuits**	Student will be able to identify and use different low voltage protective switchgears	
EEL404.5	**Residential/ Industrial Wiring**	Student will be able to identify and use different wiring accessories and tools	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER - V

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEC501	ACADEMIC YEAR	2018-19
COURSE NAME	Power System-II		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC501.1	**Symmetrical Fault Analysis**	Students will be able to understand different kind of faults on transmission line.	
EEC501.2	**Symmetrical Components**	Students will be able to analyse symmetrical fault	
EEC501.3	**Unsymmetrical Fault Analysis**	Students will be able to analyse symmetrical components and unsymmetrical faults	
EEC501.4	**Power System Transients**	Students will be able to illustrate and analyse power system transients .	
EEC501.5	**Insulation Coordination**	Students will be able to understand insulation co-ordination in power system	
EEC501.6	**Corona**	Students will be able to understand and analyse corona on transmission line.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEC502	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Machine - III		
NAME OF FACULTY	Prof. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC502.1	**Three Phase Induction Motors**	Students will be able to illustrate the working principle of three phase induction motor	
EEC502.2	**Three Phase Induction Motors: Speed Control and Starting**	Students will be able to analyse and evaluate performance of three phase induction motors under various operating conditions	
EEC502.3	**Single phase Induction Motor**	Students will be able to illustrate various speed control and starting methods of three phase induction motor	
EEC502.4	**Types of Single phase Induction Motor & its Applications**	Students will be able to illustrate the working principle of single phase induction motor	
EEC502.5	**Design of Three phase Induction motors**	Students will be able to analyse the performance of single phase induction motor.	
EEC502.6	**Performance Measurement of Three Phase Induction Motors**	Students will be able to design three phase induction motor	

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SEMESTER	V	CLASS	T.E
COURSE NO.	EEC503	ACADEMIC YEAR	2018-2019
COURSE NAME	Control System -I		
NAME OF FACULTY	Prof. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC503.1	**Mathematical Model of Physical System**	Students will be familiar with model electrical and electromechanical system using transfer function.	
EEC503.2	**Time domain Analysis**	Student will be familiar with Illustration methodology for simplification of system	
EEC503.3	**State Variable Analysis**	Students will be able to model and analyse given system in state space .	
EEC503.4	**Root locus techniques**	Students will be familiar to analyse steady state condition of given system	
EEC503.5	**Frequency Domain Analysis**	Students will be familiar to analyse the transient and stability conditions of physical system	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEC504	ACADEMIC YEAR	2018-2019
COURSE NAME	POWER ELECTRONICS		
NAME OF FACULTY	SUSHANT KUMAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC504.1	**Thyristors**	Students will be able to select and design power electronic converter topologies for a broad range of energy conversion applications. .	
EEC504.2	**Power semiconductor devices**	Students will be able to analyse and simulate the performance of power electronic conversion systems.	
EEC504.3	**Controlled Rectifiers**	Students will be able to analyse various single phase and three phase power converter circuits and understand their applications. .	
EEC504.4	**Inverter**	Students will be able to analyse various single phase and three phase power converter circuits and understand their applications. .	
EEC504.5	**DC to DC Converter**	Students will be able to apply the basic concepts of power electronics to design the circuits in the fields of AC and DC drives, power generation and transmission and energy conversion, industrial applications	
EEC504.6	**AC voltage controllers**	Students will be able to identify and describe various auxiliary circuits and requirements in power electronics applications such as Gate driver circuit, and snubber circuits along with electrical isolation and heat sinks .	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEDLO5013	ACADEMIC YEAR	2018-2019
COURSE NAME	Utilization of Electrical Energy		
NAME OF FACULTY	PROF. Kavita Mhaskar		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO5013.1	**Power Factor**	Students will be familiar to understand and analyse the power factor for improving the quality of supply.	
EEDLO5013.2	**Electric Traction**	Students will be familiar to analyse different type of traction systems	
EEDLO5013.3	**Electric Traction Motors and Controls**	Students will be able to understand modern tools to control electric traction motors	
EEDLO5013.4	**Electric Heating**	Students will be familiar to understand concept of electrical heating and welding and their application.	
EEDLO5013.5	**Electric Welding**	Students will be familiar to understand concept of electrical heating and welding and their application	
EEDLO5013.6	**Other application of Electrical Energy**	Students will be able to understand different methods of cooling systems used in domestic electric appliances.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEL501	ACADEMIC YEAR	2018-2019
COURSE NAME	Business Communication & Ethics		
NAME OF FACULTY	PROF. AVINASH PAWAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL501.1	**Report Writing**	Design a technical document using precise language, suitable vocabulary and apt style.	
EEL501.2	**Technical Proposals**	Design a technical document using precise language, suitable vocabulary and apt style.	
EEL501.3	**Introduction to Interpersonal Skills**	Develop the life skills/ interpersonal skills to progress professionally by building stronger relationships	
EEL501.4	**Meetings and Documentation**	Demonstrate awareness of contemporary issues knowledge of professional and ethical responsibilities.	
EEL501.5	**Introduction to Corporate Ethics and etiquettes**	Apply the traits of a suitable candidate for a job/higher education, upon being trained in the techniques of holding a group discussion, facing interviews and writing resume/SOP. .	
EEL501.6	**Employment Skills**	Deliver formal presentations effectively implementing the verbal and non-verbal skills. .	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEL502	ACADEMIC YEAR	2018-2019
COURSE NAME	Control System Lab		
NAME OF FACULTY	PROF. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL502.1		Students will be able to illustrate the functioning of various components of control system.	
EEL502.2		Students will be able to analyse the response of physical system for various inputs.	
EEL502.3		Students will be able to analyse the stability of the system using time domain and frequency domain techniques by simulation.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEL503	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Machines Lab -III		
NAME OF FACULTY	PROF. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL503.1		Students will be able to evaluate performance of single phase and three phase induction motor by carrying load test.	
EEL503.2		Students will be able to analyse performance of single phase and three phase induction motor by carrying no load and blocked rotor test.	
EEL503.3		Students will be able to illustrate the operation of various type of starters.	
EEL503.4		Students will be able to illustrate different methods of speed control for three phase induction motor.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	V	CLASS	T.E
COURSE NO.	EEL504	ACADEMIC YEAR	2018-2019
COURSE NAME	Power Electronics Lab		
NAME OF FACULTY	PROF. SUSHANTKUMAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL504.1		Students will be able to draw V-I characteristics of power electronic devices.	
EEL504.2		Students will be able to simulate the performance of power electronic conversion systems.	
EEL504.3		Students will be able to analyse various single phase and three phase power converter circuits and understand their applications.	
EEL504.4		Students will be able to apply the basic concepts of power electronics to design the circuits in the fields of AC and DC drives, power generation and transmission and energy conversion, industrial applications.	
EEL504.5		Students will be able to identify and describe various auxiliary circuits and requirements in power electronics applications such as Gate driver circuit, and snubber circuits along with electrical isolation and heat sinks	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER – VI

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	TE
COURSE NO.	EEC601	ACADEMIC YEAR	2018-19
COURSE NAME	Protection and Switchgear Engineering		
NAME OF FACULTY	PROF. SUNIL SUKNALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC601.1	**Substation Equipment and switching devices**	Students should be able to select the appropriate switching/protecting device for substations.	
EEC601.2	**Circuit Breakers and Fuses**	Students should be able to discriminate between the application of circuit breaker and fuses as a protective device.	
EEC601.3	**Introduction to Protective relaying**	Students should be able to understand the basic concept of relay, types of relay and their applications in power system.	
EEC601.4	**Protection Schemes Provided for major Apparatus**	Students should be able to select the specific protection required for different components of power system according to the type of fault.	
EEC601.5	**Protection of Transmission Lines**	Students should be able to apply the specific protection provided for different types of transmission lines.	
EEC601.6	**Introduction to Static & Numerical Relays**	Students should be able to understand the basic concept of relay, types of relay and their applications in power system.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	TE
COURSE NO.	EEC602	ACADEMIC YEAR	2018-19
COURSE NAME	Electrical Machines -IV		
NAME OF FACULTY	Prof. Piyali Mondal		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC602.1	**Synchronous Generator**	Students should be able to determine the performance parameters of synchronous machines graphically and analytically by conducting different test.	
EEC602.2	**Performance of Synchronous Generator**	Students should be able to analyse the performance parameters of synchronous machines.	
EEC602.3	**Salient pole synchronous generator**	Students should be able to understand the concept of direct and quadrature axis parameters of synchronous machines.	
EEC602.4	**Synchronous Motor**	Students should be able to understand and analyse the operation of synchronous motor.	
EEC602.5	**Theory of Synchronous Machines**	Students should be able to analyse abc to dq0 transformation and steady state operation of synchronous machine.	
EEC602.6	**BLDC Motor**	Students should be able understand the operation and analyse control of BLDC motors.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	TE
COURSE NO.	EEC603	ACADEMIC YEAR	2018-19
COURSE NAME	Signal Processing		
NAME OF FACULTY	PROF. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC603.1	**Classification of Signal and System**	Student should have ability to discriminate continuous and discrete time signals and systems.	
EEC603.2	**Z-Transform**	Student should able to understand the transformation of discrete time signal to Z domain..	
EEC603.3	**Frequency Response**	Student should able to analyse frequency response of systems using Z domain.	
EEC603.4	**Discrete and Fast Fourier Transform**	Student should be able to understand discrete and fast Fourier transform.	
EEC603.5	**Design of FIR System**	Student should have ability to design FIR system.	
EEC603.6	**Design of IIR System**	Student should able to design IIR System.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	TE
COURSE NO.	EEC604	ACADEMIC YEAR	2018-19
COURSE NAME	Microcontroller and its Applications		
NAME OF FACULTY	PROF. ASHWINI HARYAN		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC604.1	**Introduction to Microcontroller**	Students should be able to understand the features and architecture of PIC 18 microcontroller.	
EEC604.2	**PIC18F Programming Model and Instruction Set**	Students should be able to understand the instructional set and apply to basic arithmetic and logical operations.	
EEC604.3	**PIC 18 Support Devices**	Students should be able to understand the supportive devices of PIC 18 microcontrollers.	
EEC604.4	**Parallel Ports and Serial Communication**	Students should be able to understand the interfacing of PIC 18 microcontroller and it's peripheral.	
EEC604.5	**PIC Programming in C**	Students should be able to understand the coding of PIC 18 microcontroller using C language.	
EEC604.6	**Microcontroller Applications**	Students should be able to design general purpose applications of PIC 18 microcontroller.	

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SEMESTER	VI	CLASS	TE
COURSE NO.	EEC605	ACADEMIC YEAR	2018-19
COURSE NAME	Control System -II		
NAME OF FACULTY	PROF. SUSHANTKUMAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC605.1	**Introduction to the Compensator**	Students will be able to understand the basic design of various compensators.	
EEC605.2	**Design of Compensators using Root Locus Technique**	Students will be able to design compensators using root locus techniques.	
EEC605.3	**Design of Compensators using Frequency response Technique (Bode Plot)**	Students will be able to design compensators using frequency response techniques.	
EEC605.4	**Design of Compensators using State variable approach**	Students will be able to design compensators using state variable approach.	
EEC605.5	**Digital control System**	Students will be able to illustrate basics of digital control system.	
EEC605.6	**Design of Digital Compensators**	Students will be able to design digital compensators.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	TE
COURSE NO.	EEDLO6022	ACADEMIC YEAR	2018-19
COURSE NAME	Micro-Grid		
NAME OF FACULTY	Prof. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO6022.1	**Introduction to Microgrid**	Students should be able to understand the projects and project management.	
EEDLO6022.2	**Microgrid Sources and Power Electronic Interfaces**	Students should be able to analyze the selection of the project and Appraisal.	
EEDLO6022.3	**Control and Design of Power Electronic Interfaces**	Students should be able to plan how project planning is executed.	
EEDLO6022.4	**Communication Infrastructure**	Students should be able to impart the execution of the project by monitoring and controlling.	
EEDLO6022.5	**Operation of Microgrid and Microgrid Protection**	Students should be able to decide the termination and closure of the project.	
EEDLO6022.6	**Microgrid Standards and Deployment**	Students should be able to understand types of contract management.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	T.E
COURSE NO.	EEL601	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Protection Lab		
NAME OF FACULTY	PROF. SUNIL SUKNALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL601.1		Students will be able to understand the concept of various over current protection scheme and its applications in power system.	
EEL601.2		Students will be able to understand the concept of various over/under voltage, over/under frequency and temperature protection scheme and its applications.	
EEL601.3		Students will be able to understand the working principle of various protective devices.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	T.E
COURSE NO.	EEL602	ACADEMIC YEAR	2018-2019
COURSE NAME	Electrical Machines Lab -IV		
NAME OF FACULTY	PROF. PIYALI MONDAL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL602.1		Students will be able to analyse the operation of synchronous machines.	
EEL602.2		Students will be able to analyse the voltage regulation of synchronous machines.	
EEL602.3		Students will be able to analyse the synchronization or parallel operation of synchronous machine.	
EEL603.3		Students will be able to determine the parameters of synchronous machines for its analysis.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	T.E
COURSE NO.	EEL603	ACADEMIC YEAR	2018-2019
COURSE NAME	Microcontroller Lab		
NAME OF FACULTY	PROF. ASHWINI HARYAN		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL603.1		Students will be able to program simple arithmetic and logical operations using PIC 18 microcontroller.	
EEL603.2		Students will be able to program timer and ADC of PIC 18 microcontroller for different applications.	
EEL603.3		Students will be able to interface different IO devices with PIC 18 microcontroller.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VI	CLASS	T.E
COURSE NO.	EEL604	ACADEMIC YEAR	2018-2019
COURSE NAME	Simulation Lab-II		
NAME OF FACULTY	PROF. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL604.1		Students will be able to code or simulate signal systems for its analysis.	
EEL604.2		Students will be able to code or simulate power system for its analysis.	
EEL604.3		Students will be able to code or simulate power electronics converter for its analysis.	
EEL604.4		Students will be able to code or simulate electrical machines for its analysis.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER – VII

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VII	CLASS	BE
COURSE NO.	EEC701	ACADEMIC YEAR	2018-2019
COURSE NAME	Power system operations & control		
NAME OF FACULTY	Prof. KAVITA MHASKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC701.1	**Load Flow Studies**	Students will be able to impart knowledge related to load flow studies and power system operation	
EEC701.2	**Economic System Operation**	Students will be able to study economic operation and automatic operation of power system	
EEC701.3	**Automatic Generation and control**	Students will be able to understand various power & energy transactions that take place within interconnected systems	
EEC701.4	**Inter Change of Power and Energy**	Students will be able to understand various power & energy transactions that take place within interconnected systems	
EEC701.5	**Power System Stability**	Students will be able to study & understand the concept of voltage stability and power system stablilty	
EEC701.6	**Voltage stabilty**	Students will be able to study & understand the concept of voltage stability and power system stablilty	

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SEMESTER	VII	CLASS	B.E
COURSE NO.	EEC702	ACADEMIC YEAR	2018-2019
COURSE NAME	High Voltage DC Transmission		
NAME OF FACULTY	Prof. RAHUL ABHYANKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC702.1	**Introduction to HVDC transmission**	Students should be able to understand basics of HVDC Transmission.	
EEC702.2	**Analysis of the Bridge rectifier**	Students should be able to analyze the bridge rectifiers.	
EEC702.3	**Control**	Students should learn the control methods and understand the characteristics curves related to control.	
EEC702.4	**Converter Firing Control**	Students should understand the converter firing control.	
EEC702.5	**Faults and protection**	Students should be able to detect the faults and understand the protection technique.	
EEC702.6	**Harmonics & Filters**	Students should understand the concepts of harmonics in HVDCT and learn the application of filters.	

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SEMESTER	VII	CLASS	BE
COURSE NO.	EEC703	ACADEMIC YEAR	2018-2019
COURSE NAME	ELECTRICAL MACHINE DESIGN		
NAME OF FACULTY	PROF. PIYALI MONDAL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC703.1	**Introduction**	Students will be able to understand the introduction of Electrical Machine and get familiar with materials used in electrical machine	
EEC703.2	**Design of Single phase and Three phase transformers**	Students will be able to understand the designing of single phase transformer and three phase transformer, performance measurement of transformer	
EEC703.3	**Performance measurement of Transformers**	Students will be able to understand the designing of single phase transformer and three phase transformer, performance measurement of transformer	
EEC703.4	**Design of Three phase Induction motors**	Students will be able to understand the designing of three phase I.M., performance measurement of I.M.	
EEC703.5	**Performance measurement of three phase Induction motors**	Students will be able to understand the designing of three phase I.M., performance measurement of I.M.	
EEC703.6	**Design examples of Transformers and Induction Motors**	Students will be able to design Transformer and three phase induction motor	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VII	CLASS	B.E
COURSE NO.	EEC704	ACADEMIC YEAR	2018-2019
COURSE NAME	CONTROL SYSTEMS II		
NAME OF FACULTY	Prof. SUSHANTKUMAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC704.1	**Introduction to controllers and controllers Design**	students will have knowledge of different compensating methods and compensators including lag, lead, lag-lead ; also different form of PID controllers.	
EEC704.2	**PID controllers**	Students will be able to design controller through adjustment via state-space along with alternative approach to controller and observer design.	
EEC704.3	**Design Via state Space**	Students will be able to understand the concepts related to Digital control system such as pulse T.F, Stability, Transient response, Steady-state error etc.	
EEC704.4	**Digital control System**	Students will be able to get introduction of different units of PLC and also knowledge of addressing modes in PLC and data files.	
EEC704.5	**Programmable Logic Controllers**	Students will be able to get introduction of different units of PLC and also knowledge of addressing modes in PLC and data files.	
EEC704.6	**Fundamentals of PLC programming**	Students will learn how to form ladder rung diagrams using instruction set of PLC and also trouble-shooting of PLC.	

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Shirgaon, Veer Savarkar Road, Virar(E), Taluka-Vasai, Palghar District-401305, Maharashtra.
Tel: (0250)2026229, (0250)6454745. Telefax: (0250)2515275. Website: www.viva-technology.org

DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VII	CLASS	BE
COURSE NO.	EEC705	ACADEMIC YEAR	2018-19
COURSE NAME	HIGH VOLTAGE ENGINEERING		
NAME OF FACULTY	Prof. PRATIK MAHALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC705.1	**Electrostatic Fields, their control and estimation**	Students will be able to study the insulating material and their applications in electrical engineering.	
EEC705.2	**Conduction and breakdown in air and other gaseous dielectrics in electric fields**	Students will be able to understand the concept of breakdown phenomenon different dielectric material.	
EEC705.3	**Breakdown in liquid and solid dielectrics**	Students will be able to understand the concept of breakdown phenomenon different dielectric material.	
EEC705.4	**Generation & Measurement of High voltage and Currents**	Students will be able to acquire knowledge of generation and measurement of high voltage and current	
EEC705.5	**Testing and evaluation of dielectric materials and power apparatus**	Students will be able to understand the testing methods and testing equipment's.	
EEC705.6	**High Voltage laboratory– design, planning and layout**	Students will be able to execute the planning of high voltage laboratory.	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER – VIII

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VIII	CLASS	B.E
COURSE NO.	EEC801	ACADEMIC YEAR	2018-2019
COURSE NAME	Design, Management and Auditing of Electrical System		
NAME OF FACULTY	Prof. Pratik Mahale		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC801.1	**Introduction**	To understand the basic knowledge of different electrical drawings/plans in electrical system.	
EEC801.2	**Design of Power Distribution System**	Acquaintance with design and selection of transformer and substation.	
EEC801.3	**Design of Switchgear Protection and Auxiliary system**	To understand the knowledge of sizing of switchgears and cables and their installation.	
EEC801.4	**Monitoring and Management of Electrical Systems**	Competency in Energy monitoring and targeting and analysis techniques energy optimization.	
EEC801.5	**Energy Audit**	To understand the basic knowledge of different terms & principles of energy conservation, audit and management.	
EEC801.6	**Energy Efficient Technologies**	To Know how the energy efficient systems, energy losses and their management.	

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SEMESTER	VIII	CLASS	B.E
COURSE NO.	EEC802	ACADEMIC YEAR	2018-2019
COURSE NAME	Drives and Control		
NAME OF FACULTY	Prof. Anojkumar Yadav		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC802.1	**Electrical Drives**	student will be able to learn the basic structure of electrical drives and fundamentals of Electrical drives	
EEC802.2	**Selection of Motor Power Rating**	student will be able to understand the various factors affecting the selection of motor power rating	
EEC802.3	**Control of Electrical Drives**	student will be able tounderstand the various strategy to control of electrical drives	
EEC802.4	**DC Drives**	Understand the basic concept of DC Drives and various speed control techniques by using power electronics controller.	
EEC802.5	**AC Drives**	student will be able to understand the basic concept AC drives and various modern speed control techniques by using power electronics controller.	
EEC802.6	**Special Motor Drives**	student will be able to learn the basic concept of special purpose drives	

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DEPARTMENT OF ELECTRICAL ENGINEERING

SEMESTER	VIII	CLASS	B.E
COURSE NO.	EEC803	ACADEMIC YEAR	2018-2019
COURSE NAME	Power System Planning and Reliability		
NAME OF FACULTY	Prof. RAHUL ABHYANKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC803.1	**Load Forecasting**	student will be able to study the importance of load forecasting in power system.	
EEC803.2	**System Planning**	student will be able to study the importance of system planning in power system.	
EEC803.3	**Reliability of Systems**	student will be able to understand the concept of system reliability in power system.	
EEC803.4	**Generating Capacity: Basic probability methods and Frequency & Duration method**	student will be able to make a Generation System Model for the Power system in terms of frequency and duration of failure.	
EEC803.5	**Operating Reserve**	student will be able to understand the concept of PJM in power system.	
EEC803.6	**Composite generation and transmission system**	student will be able to calculate reliability indices of the power system based on system model and the load curve.	

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SEMESTER	VIII	CLASS	B.E
COURSE NO.	EEC804	ACADEMIC YEAR	2018-2019
COURSE NAME	Flexible AC Transmission Systems		
NAME OF FACULTY	Prof. SUNIL SUKNALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC804.1	**FACTS Concepts and General System Considerations**	student will be able to understand basic FACTS concepts and general system consideration.	
EEC804.2	**Load Compensation**	student will be able to understand concepts of compensation and analyze its objectives	
EEC804.3	**Static shunt compensators**	student will be able to understand working of shunt controllers and frame various problems related to shunt controller and find its solution.	
EEC804.4	**Static series compensation**	student will be able to understand working of series controllers and frame various problem related to series controller and find its solution.	
EEC804.5	**Static voltage and phase angle regulators**	student will be able to understand working of static voltage regulator and phase angle regulator.	
EEC804.6	**Unified Power Flow Controller (UPFC)**	student will be able to understand working of Unified power flow controllers.	