

Late Shri Vishnu Waman Thakur Charitable Trust's

# **VIVA INSTITUTE OF TECHNOLOGY**

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](http://www.viva-technology.org)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

### **COURSE OUTCOME**

## **SEMESTER - III**

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEC301	ACADEMIC YEAR	2020-21
COURSE NAME	Engineering Mathematics-III		
NAME OF FACULTY	PROF. RAMASHANKAR PRAJAPATI		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC301.1		Student will be able to understand the concept of Laplace transform and its application to solve the real integrals in engineering problems.	
EEC301.2		Student will be able to understand the concept of inverse Laplace transform of various functions and its applications in engineering problems.	
EEC301.3		Student will be able to expand the periodic function by using Fourier series for real life problems and complex engineering problems.	
EEC301.4		Student will be able to understand complex variable theory, application of harmonic conjugate to get orthogonal trajectories and analytic function.	
EEC301.5		Student will be able to use matrix algebra to solve the engineering problems.	
EEC301.6		Student will be able to apply the concepts of vector calculus in real life problems.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEC302	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical Circuit Analysis		
NAME OF FACULTY	PROF. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC302.1		The learner will be able to apply network theorems for the analysis of electrical circuits.	
EEC302.2		The learner will be able to obtain the transient and steady-state response of electrical circuits.	
EEC302.3		The learner will be able to develop and analyse transfer function model of system using two port network parameters.	
EEC302.4		The learner will be able to analyse time domain behavior from pole zero plot.	
EEC302.5		The learner will be able to analyse electrical network using graph theory.	
EEC302.6		The learner will be able to analyse the effect of switching conditions on electrical networks using differential equations and Laplace Theorem.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEC303	ACADEMIC YEAR	2020-21
COURSE NAME	Fundamentals of Electrical Machines & Measurements		
NAME OF FACULTY	PROF. BHAVITA PATIL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC303.1		The learner will be able to illustrate the principle of energy conversion in single and double excited machines.	
EEC303.2		The learner will be able to understand the performance parameters of DC machines.	
EEC303.3		The learner will be able to analyze the effect of performance parameters and application of DC machines.	
EEC303.4		The learner will be able to analyze the working of various analog and digital instruments in electrical and electronic measurements.	
EEC303.5		The learner will be able to analyze the performance of bridges used in electrical and electronic measurements.	
EEC303.6		The learner will be able to Illustrate the need for extension of range of meters and calibration in instruments.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEC304	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical Power System-I		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC304.1		The learner will be able to understand the power system and its components.	
EEC304.2		The learner will be able to categorize the ac transmission / distribution lines and understand the insulators.	
EEC304.3		The learner will be able to evaluate the parameters of different types of ac transmission / distribution lines.	
EEC304.4		The learner will be able to draw the PU reactance diagram of a power system for analysis.	
EEC304.5		The learner will be able to analyse the performance of transmission lines.	
EEC304.6		The learner will be able to understand the performance parameters of electric cable and earthing.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEC305	ACADEMIC YEAR	2020-21
COURSE NAME	Analog Electronics		
NAME OF FACULTY	PROF. BHUSHAN SAVE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC305.1		The learner will be able to design and analyse various rectifiers and amplifier circuits.	
EEC305.2		The learner will be able to analyse DC and AC parameters of BJT.	
EEC305.3		The learner will be able to analyse DC and AC parameters of MOSFET.	
EEC305.4		The learner will be able to understand the functioning of OP-AMP and design OP-AMP based circuits.	
EEC305.5		The learner will be able to practical design aspect of regulated power supply circuits using linear regulators.	
EEC305.6		The learner will be able to understand applications of commonly used special semiconductor devices.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEL301	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical and Electronics Measurement Lab		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL301.1		The learner will be able to illustrate and analyze the performance of DC machines.	
EEL301.2		The learner will be able to demonstrate different speed control methods of DC motors.	
EEL301.3		The learner will be able to illustrate and analyze the working of various sensors, transducers and instruments used for measurement of the various physical parameters.	
EEL301.4		The learner will be able to demonstrate the use of bridges for measurements of passive electrical components.	
EEL301.5		The learner will be able to understand and analyse the working signal processing circuits used in measurements and instruments	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEL302	ACADEMIC YEAR	2020-21
COURSE NAME	Electronics Lab-I		
NAME OF FACULTY	PROF. BHUSHAN SAVE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL302.1		The learner will be able to identify the different types of semiconductor devices and demonstrate their applications in electronic circuits.	
EEL302.2		The learner will be able to analyse the performance of different types of rectifier with and without filter.	
EEL302.3		The learner will be able to determine the dc and ac parameters of various semiconductor devices.	
EEL302.4		The learner will be able to illustrate the frequency response of BJT/ MOSFET amplifier.	
EEL302.5		The learner will be able to understand the practical use of Op-amps in signal processing and waveform generators.	



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEL303	ACADEMIC YEAR	2020-21
COURSE NAME	Simulation Lab-I		
NAME OF FACULTY	PROF. BHAVITA PATIL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL303.1		The learner will be able to develop knowledge of software packages to model and program electrical and electronics systems	
EEL303.2		The learner will be able to model different electrical and electronic systems and analyze the results	
EEL303.3		The learner will be able to articulate importance of software packages used for simulation in laboratory experimentation /research by analyzing the simulation results.	
EEL303.4		The learner will be able to simulate electric machines/circuits for performance analysis.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	III	CLASS	SE
COURSE NO.	EEL304	ACADEMIC YEAR	2020-21
COURSE NAME	Skill Based Lab (SBL) Applied Electrical Engineering Lab		
NAME OF FACULTY	PROF. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL304.1		The learner will be able to demonstrate the effective use of various electrical and electronic measuring lab equipments.	
EEL304.2		The learner will be able to identify various electrical LV/HV substation, supply equipments and their network connection	
EEL304.3		The learner will be able to identify and use different low voltage protective switchgears along with residential /industrial wiring practices.	
EEL304.4		The learner will be able to repair and maintain common house-hold appliances.	
EEL304.5		The learner will be able to handle Electrical fire and shock hazards safety challenges in real practice.	

Late Shri Vishnu Waman Thakur Charitable Trust's

# **VIVA INSTITUTE OF TECHNOLOGY**

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](http://www.viva-technology.org)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

# **SEMESTER - IV**

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	IV	CLASS	SE
COURSE NO.	EEC401	ACADEMIC YEAR	2020-21
COURSE NAME	Engineering Mathematics-IV		
NAME OF FACULTY	PROF. BHAGYASHREE NETKE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC401.1		Student will be able to use the concepts of Complex Integration for evaluating integrals, computing residues & evaluate various contour integrals.	
EEC402.2		Student will be able to apply the concept of Correlation and Regression to the engineering problems in data science, machine learning and AI.	
EEC402.3		Student will be able to apply the concepts of probability and expectation for getting the spread of the data and distribution of probabilities.	
EEC402.4		Student will be able to apply the concept of vector spaces and orthogonalization process in Engineering Problems.	
EEC402.5		Student will be able to use the concept of Quadratic forms and Singular value decomposition which are very useful tools in various Engineering applications.	
EEC402.6		Student will be able to find the extremals of the functional using the concept of Calculus of variation.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	IV	CLASS	S.E
COURSE NO.	EEC402	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical AC Machines - I		
NAME OF FACULTY	PROF. KAVITA MHASKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC402.1		The learner will be able to illustrate working principle and performance of single phase transformer under different operating conditions	
EEC402.2		The learner will be able to understand working principle of autotransformer.	
EEC402.3		The learner will be able to analyze various types of connections and performance of three phase transformer under various conditions.	
EEC402.4		The learner will be able to demonstrate working principle and evaluate performance of three phase induction motor under various operating conditions.	
EEC402.5		The learner will be able to exemplify various starting methods and speed control of three phase induction motor.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	IV	CLASS	S.E
COURSE NO.	EEC403	ACADEMIC YEAR	2020-2120
COURSE NAME	Digital Electronics		
NAME OF FACULTY	PROF. BHUSHAN SAVE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC403.1		The learner will be able to perform various conversion of number systems	
EEC403.2		The learner will be able to understand working of logic families and logic gates.	
EEC403.3		The learner will be able to design and implement combinational circuits.	
EEC403.4		The learner will be able to design and implement sequential circuits.	
EEC403.5		The learner will be able to understand working of logic families and logic gates.	
EEC403.6		The learner will be able to use PLDs to implement the given logical problem.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	IV	CLASS	SE
COURSE NO.	EEC404	ACADEMIC YEAR	2020-21
COURSE NAME	Power Electronic Devices and Circuits		
NAME OF FACULTY	PROF. ONKAR HEDALKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC404.1		The learner will be able to understand the basic operation and characteristics of various semi controllable and fully controllable devices	
EEC404.2		The learner will be able to analyse various single phase and three phase power converter circuits and understand their applications.	
EEC404.3		The learner will be able to analyse dc to dc converter circuits and their applications.	
EEC404.4		The learner will be able to identify and describe various auxiliary circuits and requirements in power electronics applications such as gate driver circuit, snubber circuits and heat sinks.	
EEC404.5		The learner will be able to apply the basic concepts to select devices and converters for various applications	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	IV	CLASS	S.E
COURSE NO.	EEC405	ACADEMIC YEAR	2020-21
COURSE NAME	Electric and Hybrid Electric Vehicle		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC405.1		The learner will be able to identify and describe the history and evolvement of electric & hybrid electric vehicles.	
EEC405.2		The learner will be able to identify and describe the principles of various EV/HEVs drive train topologies.	
EEC405.3		The learner will be able to select electric propulsion system components for EV/HEV drives for the desirable performance and control.	
EEC405.4		The learner will be able to compare and evaluate various energy sources and energy storage components for EV/HEV.	
EEC405.5		The learner will be able to model, analyze and design EV/HEV drive train with energy management strategies.	
EEC405.6		The learner will be able to recognize the need to adapt and engage in operations EV/HEV for sustainable transportation system.	



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	IV	CLASS	S.E
COURSE NO.	EEL401	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical AC Machines Lab-I		
NAME OF FACULTY	Prof. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC406.1		The learner will be able to demonstrate the working principles and types of connections of 1 $\phi$ and 3 $\phi$ transformers.	
EEC406.2		The learner will be able to analyze the performance of 3 $\phi$ transformer under various operating conditions.	
EEC406.3		The learner will be able to evaluate the performance of 3 $\phi$ induction motor by carrying no load test , blocked rotor test and load test	
EEC405.4		The learner will be able to illustrate the operation of various type of 3 $\phi$ induction motor starters	
EEC406.5		The learner will be able to illustrate different methods of speed control and braking of 3 $\phi$ induction motors.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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

COURSE NO.	EEL402	ACADEMIC YEAR	2020-21
COURSE NAME	Python Programming Lab		
NAME OF FACULTY	PROF. SANIKET KUDOO		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL402.1		The learner will be able to describe the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python	
EEL402.2		The learner will be able to express different Decision Making statements and Functions	
EEL402.3		The learner will be able to object oriented programming in Python	
EEL402.4		The learner will be able to understand and summarize different File handling operations	
EEL402.5		The learner will be able to explain how to design GUI Applications in Python and evaluate different database operations	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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

COURSE NO.	EEL403	ACADEMIC YEAR	2020-21
COURSE NAME	Electronics Lab II		
NAME OF FACULTY	PROF. BHUSHAN SAVE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL402.1		The learner will be able to use various digital logic Gates, flip-flops and counters for various applications	
EEL402.2		The learner will be able to build, design and analyse sequential / combinational circuits.	
EEL402.3		The learner will be able to understand the operation various power electronics devices and circuits	
EEL402.4		The learner will be able to use power converters for various real life applications	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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

COURSE NO.	EEL403	ACADEMIC YEAR	2020-21
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	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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

COURSE NO.	EEL404	ACADEMIC YEAR	2020-21
COURSE NAME	Skill Based Lab- II PCB Design and Fabrication Lab		
NAME OF FACULTY	PROF. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL404.1		The learner will be able to understand types of PCBs and various tools used for PCB design.	
EEL404.2		The learner will be able to identify various electrical/electronic components and their packages/footprints.	
EEL404.3		The learner will be able to illustrate the use of PCB CAD tools and their features for the practical designs.	
EEL404.4		The learner will be able to design the schematic, board layout for simple, moderately complex and complex circuits.	
EEL404.5		The learner will be able to fabricate and assemble the PCBs for simple and moderately complex circuits.	

Late Shri Vishnu Waman Thakur Charitable Trust's

# **VIVA INSTITUTE OF TECHNOLOGY**

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](http://www.viva-technology.org)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

# **SEMESTER - V**

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEC501	ACADEMIC YEAR	2020-21
COURSE NAME	Power System-II		
NAME OF FACULTY	PROF. PIYALI MONDAL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC501.1	<b>Symmetrical Fault Analysis</b>	Students will be able to understand different kind of faults on transmission line.	
EEC501.2	<b>Symmetrical Components</b>	Students will be able to analyse symmetrical fault	
EEC501.3	<b>Unsymmetrical Fault Analysis</b>	Students will be able to analyse symmetrical components and unsymmetrical faults	
EEC501.4	<b>Power System Transients</b>	Students will be able to illustrate and analyse power system transients .	
EEC501.5	<b>Insulation Coordination</b>	Students will be able to understand insulation co-ordination in power system	
EEC501.6	<b>Corona</b>	Students will be able to understand and analyse corona on transmission line.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEC502	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical Machine – III		
NAME OF FACULTY	Prof. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC502.1	<b>Three Phase Induction Motors</b>	Students will be able to illustrate the working principle of three phase induction motor	
EEC502.2	<b>Three Phase Induction Motors: Speed Control and Starting</b>	Students will be able to analyse and evaluate performance of three phase induction motors under various operating conditions	
EEC502.3	<b>Single phase Induction Motor</b>	Students will be able to illustrate various speed control and starting methods of three phase induction motor	
EEC502.4	<b>Types of Single phase Induction Motor &amp; its Applications</b>	Students will be able to illustrate the working principle of single phase induction motor	
EEC502.5	<b>Design of Three phase Induction motors</b>	Students will be able to analyse the performance of single phase induction motor.	
EEC502.6	<b>Performance Measurement of Three Phase Induction Motors</b>	Students will be able to design three phase induction motor	



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEC503	ACADEMIC YEAR	2020-21
COURSE NAME	Control System -I		
NAME OF FACULTY	Prof. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC503.1	<b>Mathematical Model of Physical System</b>	Students will be familiar with model electrical and electromechanical system using transfer function.	
EEC503.2	<b>Time domain Analysis</b>	Student will be familiar with Illustration methodology for simplification of system	
EEC503.3	<b>State Variable Analysis</b>	Students will be able to model and analyse given system in state space .	
EEC503.4	<b>Root locus techniques</b>	Students will be familiar to analyse steady state condition of given system	
EEC503.5	<b>Frequency Domain Analysis</b>	Students will be familiar to analyse the transient and stability conditions of physical system	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEC504	ACADEMIC YEAR	2020-21
COURSE NAME	POWER ELECTRONICS		
NAME OF FACULTY	SUSHANT KUMAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC504.1	<b>Thyristors</b>	Students will be able to select and design power electronic converter topologies for a broad range of energy conversion applications. .	
EEC504.2	<b>Power semiconductor devices</b>	Students will be able to analyse and simulate the performance of power electronic conversion systems.	
EEC504.3	<b>Controlled Rectifiers</b>	Students will be able to analyse various single phase and three phase power converter circuits and understand their applications. .	
EEC504.4	<b>Inverter</b>	Students will be able to analyse various single phase and three phase power converter circuits and understand their applications. .	
EEC504.5	<b>DC to DC Converter</b>	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	<b>AC voltage controllers</b>	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 .	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEDLO5013	ACADEMIC YEAR	2020-2120
COURSE NAME	Utilization of Electrical Energy		
NAME OF FACULTY	PROF. RAHUL ABHYANKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO5013.1	<b>Power Factor</b>	Students will be familiar to understand and analyse the power factor for improving the quality of supply.	
EEDLO5013.2	<b>Electric Traction</b>	Students will be familiar to analyse different type of traction systems	
EEDLO5013.3	<b>Electric Traction Motors and Controls</b>	Students will be able to understand modern tools to control electric traction motors	
EEDLO5013.4	<b>Electric Heating</b>	Students will be familiar to understand concept of electrical heating and welding and their application.	
EEDLO5013.5	<b>Electric Welding</b>	Students will be familiar to understand concept of electrical heating and welding and their application	
EEDLO5013.6	<b>Other application of Electrical Energy</b>	Students will be able to understand different methods of cooling systems used in domestic electric appliances.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEL501	ACADEMIC YEAR	2020-2120
COURSE NAME	Business Communication & Ethics		
NAME OF FACULTY	PROF. PRASHANT PAWAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL501.1	<b>Report Writing</b>	Design a technical document using precise language, suitable vocabulary and apt style.	
EEL501.2	<b>Technical Proposals</b>	Design a technical document using precise language, suitable vocabulary and apt style.	
EEL501.3	<b>Introduction to Interpersonal Skills</b>	Develop the life skills/ interpersonal skills to progress professionally by building stronger relationships	
EEL501.4	<b>Meetings and Documentation</b>	Demonstrate awareness of contemporary issues knowledge of professional and ethical responsibilities.	
EEL501.5	<b>Introduction to Corporate Ethics and etiquettes</b>	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	<b>Employment Skills</b>	Deliver formal presentations effectively implementing the verbal and non-verbal skills. .	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEL502	ACADEMIC YEAR	2020-2120
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.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	V	CLASS	T.E
COURSE NO.	EEL503	ACADEMIC YEAR	2020-2120
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.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	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	

Late Shri Vishnu Waman Thakur Charitable Trust's

# **VIVA INSTITUTE OF TECHNOLOGY**

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](http://www.viva-technology.org)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

# **SEMESTER – VI**



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	TE
COURSE NO.	EEC601	ACADEMIC YEAR	2020-21
COURSE NAME	Protection and Switchgear Engineering		
NAME OF FACULTY	PROF. RITESH CHAVAN		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC601.1	<b>Substation Equipment and switching devices</b>	Students should be able to select the appropriate switching/protecting device for substations.	
EEC601.2	<b>Circuit Breakers and Fuses</b>	Students should be able to discriminate between the application of circuit breaker and fuses as a protective device.	
EEC601.3	<b>Introduction to Protective relaying</b>	Students should be able to understand the basic concept of relay, types of relay and their applications in power system.	
EEC601.4	<b>Protection Schemes Provided for major Apparatus</b>	Students should be able to select the specific protection required for different components of power system according to the type of fault.	
EEC601.5	<b>Protection of Transmission Lines</b>	Students should be able to apply the specific protection provided for different types of transmission lines.	
EEC601.6	<b>Introduction to Static &amp; Numerical Relays</b>	Students should be able to understand the basic concept of relay, types of relay and their applications in power system.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	TE
COURSE NO.	EEC602	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical Machines -IV		
NAME OF FACULTY	Prof. Piyali Mondal		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC602.1	<b>Synchronous Generator</b>	Students should be able to determine the performance parameters of synchronous machines graphically and analytically by conducting different test.	
EEC602.2	<b>Performance of Synchronous Generator</b>	Students should be able to analyse the performance parameters of synchronous machines.	
EEC602.3	<b>Salient pole synchronous generator</b>	Students should be able to understand the concept of direct and quadrature axis parameters of synchronous machines.	
EEC602.4	<b>Synchronous Motor</b>	Students should be able to understand and analyse the operation of synchronous motor.	
EEC602.5	<b>Theory of Synchronous Machines</b>	Students should be able to analyse abc to dq0 transformation and steady state operation of synchronous machine.	
EEC602.6	<b>BLDC Motor</b>	Students should be able understand the operation and analyse control of BLDC motors.	

Late Shri Vishnu Waman Thakur Charitable Trust's

# VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	TE
COURSE NO.	EEC603	ACADEMIC YEAR	2020-21
COURSE NAME	Signal Processing		
NAME OF FACULTY	PROF. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC603.1	<b>Classification of Signal and System</b>	Student should have ability to discriminate continuous and discrete time signals and systems.	
EEC603.2	<b>Z-Transform</b>	Student should able to understand the transformation of discrete time signal to Z domain..	
EEC603.3	<b>Frequency Response</b>	Student should able to analyse frequency response of systems using Z domain.	
EEC603.4	<b>Discrete and Fast Fourier Transform</b>	Student should be able to understand discrete and fast Fourier transform.	
EEC603.5	<b>Design of FIR System</b>	Student should have ability to design FIR system.	
EEC603.6	<b>Design of IIR System</b>	Student should able to design IIR System.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	TE
COURSE NO.	EEC604	ACADEMIC YEAR	2020-21
COURSE NAME	Microcontroller and its Applications		
NAME OF FACULTY	PROF. ASHWINI HARYAN		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC604.1	<b>Introduction to Microcontroller</b>	Students should be able to understand the features and architecture of PIC 18 microcontroller.	
EEC604.2	<b>PIC18F Programming Model and Instruction Set</b>	Students should be able to understand the instructional set and apply to basic arithmetic and logical operations.	
EEC604.3	<b>PIC 18 Support Devices</b>	Students should be able to understand the supportive devices of PIC 18 microcontrollers.	
EEC604.4	<b>Parallel Ports and Serial Communication</b>	Students should be able to understand the interfacing of PIC 18 microcontroller and it's peripheral.	
EEC604.5	<b>PIC Programming in C</b>	Students should be able to understand the coding of PIC 18 microcontroller using C language.	
EEC604.6	<b>Microcontroller Applications</b>	Students should be able to design general purpose applications of PIC 18 microcontroller.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	TE
COURSE NO.	EEC605	ACADEMIC YEAR	2020-21
COURSE NAME	Control System –II		
NAME OF FACULTY	PROF. ONKAR HEDALKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC605.1	<b>Introduction to the Compensator</b>	Students will be able to understand the basic design of various compensators.	
EEC605.2	<b>Design of Compensators using Root Locus Technique</b>	Students will be able to design compensators using root locus techniques.	
EEC605.3	<b>Design of Compensators using Frequency response Technique (Bode Plot)</b>	Students will be able to design compensators using frequency response techniques.	
EEC605.4	<b>Design of Compensators using State variable approach</b>	Students will be able to design compensators using state variable approach.	
EEC605.5	<b>Digital control System</b>	Students will be able to illustrate basics of digital control system.	
EEC605.6	<b>Design of Digital Compensators</b>	Students will be able to design digital compensators.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	TE
COURSE NO.	EEDLO6022	ACADEMIC YEAR	2020-21
COURSE NAME	Micro-Grid		
NAME OF FACULTY	Prof. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO6022.1	<b>Introduction to Microgrid</b>	Students should be able to understand the projects and project management.	
EEDLO6022.2	<b>Microgrid Sources and Power Electronic Interfaces</b>	Students should be able to analyze the selection of the project and Appraisal.	
EEDLO6022.3	<b>Control and Design of Power Electronic Interfaces</b>	Students should be able to plan how project planning is executed.	
EEDLO6022.4	<b>Communication Infrastructure</b>	Students should be able to impart the execution of the project by monitoring and controlling.	
EEDLO6022.5	<b>Operation of Microgrid and Microgrid Protection</b>	Students should be able to decide the termination and closure of the project.	
EEDLO6022.6	<b>Microgrid Standards and Deployment</b>	Students should be able to understand types of contract management.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	T.E
COURSE NO.	EEL601	ACADEMIC YEAR	2020-21
COURSE NAME	Electrical Protection Lab		
NAME OF FACULTY	PROF. MUKESHKUMAR MISHRA		
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.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	T.E
COURSE NO.	EEL602	ACADEMIC YEAR	2020-21
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.	



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	T.E
COURSE NO.	EEL603	ACADEMIC YEAR	2020-21
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.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VI	CLASS	T.E
COURSE NO.	EEL604	ACADEMIC YEAR	2020-21
COURSE NAME	Simulation Lab-II		
NAME OF FACULTY	PROF. RAHUL ABHYANKAR		
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.	

Late Shri Vishnu Waman Thakur Charitable Trust's

# **VIVA INSTITUTE OF TECHNOLOGY**

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](http://www.viva-technology.org)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

# **SEMESTER – VII**

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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.	EEC701	ACADEMIC YEAR	2020-21
COURSE NAME	Power system - III		
NAME OF FACULTY	Prof. KAVITA MHASKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC701.1		Students will be able to analyze power system problem and find out its solutions	
EEC701.2		Students will be able to identify and analyze the dynamics of power systems and methods to improve stability of system.	
EEC701.3		Students will be able to study different methods of load flow solutions.	
EEC701.4		Students will be able to application of optimization methods for task like economic load dispatch	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	B.E
COURSE NO.	EEC702	ACADEMIC YEAR	2020-2120
COURSE NAME	Drives and Control		
NAME OF FACULTY	Prof. PIYALI MONDAL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC702.1	<b>Electrical Drives: Introduction &amp; Dynamics</b>	Students will be able to understand the dynamics of electrical drive.	
EEC702.2	<b>Selection of Motor Power Rating</b>	Students will be able to understand the motor power rating calculation for a specific application for reliable operation.	
EEC702.3	<b>Control of Electrical Drives</b>	Students will be able to understand the modes of operation and close loop control of electrical drive.	
EEC702.4	<b>DC Drives</b>	Students will be able to analyze the speed control of DC drives in an energy efficient manner using power electronics.	
EEC702.5	<b>AC Drives</b>	Students will be able to analyze the speed control of induction motor drive using various methods.	
EEC702.6	<b>Advanced control techniques</b>	Students will be able to learn the advance control techniques for AC drives.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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.	EEC703	ACADEMIC YEAR	2020-2120
COURSE NAME	High Voltage Direct Current Transmission		
NAME OF FACULTY	PROF. SUNIL SUKNALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC703.1		Students will be able to identify significance of dc over ac transmission systems, types of HVDC link, Components of HVDC system and applications.	
EEC703.2		Students will be able to analyse multi-pulse converters.	
EEC703.3		Students will be able to understand the basic control of HVDC system and its limitation, features and implementation.	
EEC703.4		Students will be able to understand converter firing control schemes for starting and stopping of HVDC link.	
EEC703.5		Students will be able to understand and analyze faults and protection of HVDC system.	
EEC703.6		Students will be able to understand harmonics, their causes, effects and use of different filters.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	B.E
COURSE NO.	EEDLO7031	ACADEMIC YEAR	2020-2120
COURSE NAME	High Voltage Engineering		
NAME OF FACULTY	PROF. PRATIK MAHALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO7031.1		Student will be able to know the fundamentals properties of the materials and their failure mechanisms to get appropriate and optimal design.	
EEDLO7031.2		Student will be able of testing of different dielectric materials and the major requirements for setting up of HV Laboratories.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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.	EEDLO7032	ACADEMIC YEAR	2020-21
COURSE NAME	Electric Vehicle Technology		
NAME OF FACULTY	Prof. MUKESHKUMAR MISHRA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO7032.1		Students will be able to identify and describe the history and evolvement of electric & hybrid electric vehicles to emphasize on the need and importance of EV/HEV for sustainable future.	
EEDLO7032.2		Students will be able to identify and describe the principles of various EV/HEVs drive train topologies along with their power flow control and fuel efficiency estimation.	
EEDLO7032.3		Students will be able to design and select electric propulsion system components for EV/HEV drives suitability for the desirable performance and control.	
EEDLO7032.4		Students will be able to compare and evaluate various energy sources and energy storage components for EV and HEV applications.	
EEDLO7032.5		Students will be able to model, analyze and design EV/HEV drive train with energy management strategies.	
EEDLO7032.6		Students will be able to recognize the need to adapt and engage in operations EV/HEV with the absolute technological change in the transportation system for sustainable future.	



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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.	ILO7018	ACADEMIC YEAR	2020-21
COURSE NAME	Energy Audit and Management		
NAME OF FACULTY	Prof. RAHUL ABHYANKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
ILO7018.1		Student will be able to identify and describe present state of energy security and its importance.	
ILO7018.2		Student will be able to identify and describe the basic principles and methodologies adopted in energy audit of an utility.	
ILO7018.3		Student will be able to describe the energy performance evaluation of some common electrical installations and identify the energy saving opportunities.	
ILO7018.4		Student will be able to describe the energy performance evaluation of some common thermal installations and identify the energy saving opportunities.	
ILO7018.5		Student will be able to analyze the data collected during performance evaluation and recommend energy saving measures.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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.	EEL701	ACADEMIC YEAR	2020-21
COURSE NAME	Simulation Lab -III		
NAME OF FACULTY	PROF. PRATIK MAHALE		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL701.1		Students will be able to code or simulate HVDCT systems for its analysis.	
EEL701.2		Students will be able to code or simulate power system for its analysis.	
EEL701.3		Students will be able to code or simulate electrical drives for its analysis.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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.	EEL702	ACADEMIC YEAR	2020-21
COURSE NAME	Drives and Control Lab		
NAME OF FACULTY	Prof. PIYALI MONDAL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEDLO7032.1		Students will be able to analyse the dynamic performance of electrical ac and dc drives.	
EEDLO7032.2		Students will be able to analyse the dynamics of braking of electrical ac and dc motors.	

Late Shri Vishnu Waman Thakur Charitable Trust's

# **VIVA INSTITUTE OF TECHNOLOGY**

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](http://www.viva-technology.org)

## **DEPARTMENT OF ELECTRICAL ENGINEERING**

# **SEMESTER – VIII**

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VIII	CLASS	B.E
COURSE NO.	EEC801	ACADEMIC YEAR	2020-2120
COURSE NAME	Design, Management and Auditing of Electrical System		
NAME OF FACULTY	PROF. KAVITA MHASKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC801.1		Students will be able to do sizing, selecting transformer, switchgear and cable as required for distribution system	
EEC801.2		Students will be able to illustrate Engineering knowledge in energy audit and energy efficient technologies to improve energy efficiency	

---

---

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VIII	CLASS	B.E
COURSE NO.	EEC802	ACADEMIC YEAR	2020-2120
COURSE NAME	Flexible AC Transmission System		
NAME OF FACULTY	Prof. PIYALI MONDAL		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC802.1		Student will be able to illustrate the aspects of flexible ac transmission system over conventional ac transmission system	
EEC802.2		Student will be able to analyze the concept of load compensation.	
EEC802.3		Student will be able to categorize the static shunt and series compensation for transmission line.	
EEC802.4		Student will be able to outline the concept of voltage and phase angle regulators.	
EEC802.5		Student will be able to understand unified power flow controllers using circuit diagram and phasors.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VIII	CLASS	B.E
COURSE NO.	EEDLO8044	ACADEMIC YEAR	2020-2120
COURSE NAME	Power System Planning and Reliability		
NAME OF FACULTY	Prof. RAHUL ABHYANKAR		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEC803.1		Students will be able to make a Generation System Model for the Power system in terms of frequency and duration of failure.	
EEC803.2		Students will be able to calculate reliability indices of the power system based on system model and the load curve.	
EEC803.3		Students will be able to plan a small Generation and Transmission system, predict its behavior, and do the required change in order to achieve reliability.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VIII	CLASS	B.E
COURSE NO.	ILO8021	ACADEMIC YEAR	2020-2120
COURSE NAME	Project Management		
NAME OF FACULTY	Prof. RITESH CHAVAN		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
ILO8021.1		Student will be able to apply selection criteria and select an appropriate project from different options.	
ILO8021.2		Student will be able to write work break down structure for a project and develop a schedule based on it.	
ILO8021.3		Student will be able to identify opportunities and threats to the project and decide an approach to deal with them strategically.	
ILO8021.4		Student will be able to use Earned value technique and determine & predict status of the project.	
ILO8021.5		Student will be able to capture lessons learned during project phases and document them for future reference	



Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VIII	CLASS	B.E
COURSE NO.	EEL801	ACADEMIC YEAR	2020-2120
COURSE NAME	Simulation Lab- IV		
NAME OF FACULTY	Prof. CHITRALEKHA VANGALA		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL801.1		Student will be able to analyze the transmission line performance with and without FACTS controllers using simulations.	
EEL801.2		Student will be able to analyze the operation of various electrical systems using simulation.	

Late Shri Vishnu Waman Thakur Charitable Trust's

## VIVA INSTITUTE OF TECHNOLOGY

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	VIII	CLASS	B.E
COURSE NO.	EEL802	ACADEMIC YEAR	2020-2120
COURSE NAME	Electrical System Design Lab		
NAME OF FACULTY	Prof. ANOJKUMAR YADAV		
COURSE OUTCOME	COURSE MODULE	DESCRIPTION	
EEL802.1		Student will be able to design electrical system for different applications.	