



Maratha Vidya Prasarak Samaj's
Karmaveer Shantarambapu Kondaji Wavare
Arts, Science and Commerce College, CIDCO, Nashik
Uttamnagar, Nashik- 422 008 (Maharashtra)

Affiliated to Savitribai Phule Pune University

Id. No. PU/NS/ASC/047/1993

AISHE C-42086

NAAC Re-accredited 'A' Grade (III Cycle 2017-22, CGPA 3.20)

Best College Award of Savitribai Phule Pune University Pune in 2009-10 and 2021-22

**Programme
Outcomes (PO's)**

Internal Quality Assurance Cell



**Programme
Specific Outcomes
(PSO's)**



**Course Outcomes
(CO's)**

Syllabus: 2019 Pattern





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**KARMAVEER SHANTARAMBAPU KONDAJI WAVARE
ARTS, SCIENCE AND COMMERCE COLLEGE, CIDCO**

Uttamnagar, Nashik- 422 008 (Maharashtra)

Principal

Affiliated to Savitribai Phule Pune University

Id. No. PU/NS/ASC/047/1993

Prof. (Dr) S. K. Kushare

AISHE C-42086

NAAC Re-accredited 'A' Grade (III Cycle 2017-22, CGPA 3.20)

M.Sc., Ph. D.

Best College Award of Savitribai Phule Pune University Pune in 2009-10 and 2021-22

Programme Outcome (PO's), Programme Specific Outcome (PSO's), Course Outcome (CO's)

Department: B. Bov. E.A.M.R.

2019 Pattern

Sr. No.	Name of the Programme	Year of introduction of programme	Duration of introduction of Programme
1	B. Voc. EAMR	2018	3 Year

Programme Specific Outcome (B.Voc. EAMR)

Sr. No.	Programme Specific Outcome (B.Voc EAMR)
PSO 1	The Programme provides opportunities for students to develop and demonstrate knowledge and understanding skills, qualities and other attributes required for Electrical industry start-up.
PSO 2	The Programme also provides to learn effective collaboration and communication in the scientific arena.
PSO 3	Students can take electrical contracts and start their own business
PSO 4	Student will able to repair all electrical appliances
PSO 5	Student will learn various basic concepts in Electrical
PSO 6	Student will learn various basic concepts in computer hardware
PSO 7	Student will learn various basic electronic components
PSO 8	Student will learn various basic Refrigerator & Air Conditioning
PSO 9	Students can do domestic wiring
PSO 10	Student will learn various basic concepts in Electrical Machines

Course Outcome (B.Voc EAMR)

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
F.Y.B.Voc. Sem I	EAT11	Communication Skills	CO 1: Formal Communication in Marathi
			CO 2: Office Correspondence
			CO 3: Business letters
			CO 4: Job Application Letter
			CO 5: Preparation of Self Introduction
			CO 6: Leadership
	EAT12	Fundamentals of Electrical Technology	CO 1: Passive Components
			CO 2: Batteries
			CO 3: Cables
			CO 4: Switches
			CO 5: Transformer
			CO 6: Measuring Instruments
	EAT13	Electrical Appliances-I	CO 1: Testing Equipments & Basic control equipments
			CO 2: Tube Light, Electric Iron
			CO 3: Water Heater & Geyser
			CO 4: Room Heater, Hair dryer
			CO 5: Fan Regulator, Table lamp
			CO 6: OTG (Oven, Toaster, Griller)
F.Y.B.Voc. Sem II	EAT21	Electrical Wiring	CO 1: Safety precautions and shock treatment
			CO 2: Electrical Tools
			CO 3: DC Circuits
			CO 4: Printed Circuit Board Soldering
			CO 5: Common electrical wiring accessories
			CO 6: Domestic wiring (house wiring)
	EAT22	Power Supplies	CO 1: Rectifier Circuits
			CO 2: Filters, Spike Guard, Zener Regulator
			CO 3: Power Supply, Stabilizer, 78XX & 79XX regulator IC
			CO 4: Power Transistor
			CO 5: Heat Sink
			CO 6: Inverter

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
F.Y.B.Voc Sem I	EAT23	Electrical Appliances-II	CO 1: Water purifiers ,Water cooler
			CO 2: Air Cooler Fan
			CO 3: Blender Mixer
			CO 4: Food processor Induction stove Microwave Oven
			CO 5: Washing Machine Vacuum Cleaner
			CO 6: Drill Machine Domestic Flour Mill
	EAP11	Communication Skills	CO 1: Draft Job Application
			CO 2: Enquiry letter
			CO 3: Draft Quotation Letter
			CO 4: Purchase order letter
			CO 5: Prepare the outline of the advertisement of your product/ business
			CO 6: Filling of tender
	EAP12	Fundamentals of Electrical Technology	CO 1: Use the Analog & Digital Measuring Instruments
			CO 2: Understand & Use Active & Passive Component
			CO 3: Use energy meters
			CO 4: Study of switches & Relays
			CO 5: Study of Solar cell
			CO 6: Study of Batteries
	EAP13	Electrical Appliances – I	CO1: Understand the working principle and construction of common domestic appliances
			CO 2: Know the cause of faults in these appliances
			CO 3: Acquire skills to testing and repairs of appliances
			CO 4: Know the students about manufacturing of different appliances
			CO 5: Testing & repairing of Oven ,OTG, Tandoor maker
			CO 6: Testing & repairing of Room Heater, Hair dryer
F.Y.B.Voc Sem II	EAP21	Electrical Wiring	CO 1: Acquire knowledge and skills about safety precautions while working.

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
			CO 2: Identify and to use different tools used in wiring
			CO 3: All units with properties and usage of different materials.
			CO 4: Understand the general concept of different wires.
			CO 5: 5. Know about electrical house wiring.
			CO 6: Design and testing of Switch Board
	EAP22	Power Supplies	CO 1: Understand various components used in power supply.
			CO 2: Design and develop a power supply.
			CO 3: Understand the specification, use of Inverter and UPS.
			CO 4: Study and testing of UPS
			CO 5: Study and testing of laboratory stabilizer
			CO 6: Study and testing of Inverter
	EAP23	Title: Electrical Appliances- II	CO1: Understand the working principle, construction, and uses of water purifier
			CO 2: Understand the working principle, construction, and uses of water cooler
			CO 3: Understand the working principle, construction, and uses of air Cooler
			CO 4: Understand the working principle, construction, and uses of fans
			CO 5: Understand the working principle, construction, and uses of mixer, blender, food processor
			CO 6: Understand the working principle, construction, and uses of Induction Stove Microwave oven Washing Machine
S.Y. B.Voc. Sem I.	EAT31	Fundamentals of Computer	CO 1: Introduction Computer hardware & software
			CO 2: Mother board components and their function
			CO 3: Storage devices
			CO 4: Input / Output devices
			CO 5: PC Maintenance

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
	EAT32	Entertainment Electronics	CO 6: Networking
			CO 1: Sensor and Transducer
			CO 2: Amplifiers
			CO 3: Oscillators
			CO 4: Speakers & Car mp3 players
			CO 5: (CRT) Colour TV. System
			CO 6: Modern Colour TV's
	EAT33	Refrigerator & Air Conditioning	CO 1: Introduction to Refrigeration
			CO 2: Vapour compression refrigeration System
			CO 3: Refrigerants
			CO 4: Component of vapor compression cycle
			CO 5: Air conditioning Psychrometry
			CO 6: Types of Air Conditioning Systems
S.Y. B.Voc Sem II.	EAT41	Business Communication	CO 1: Business Communication
			CO 2: Principles of communication
			CO 3: Barriers to Communication and Remedies
			CO 4: Methods and Channels of Communication
			CO 5: Soft Skills
			CO 6: New Technologies in Business Communication
	EAT42	Electrical Machines	CO 1: Electromagnetism
			CO 2: D.C. motor
			CO 3: Single phase transformer
			CO 4: Single Phase A.C. Motor
			CO 5: Rewinding
			CO 6: winding
	EAT43	Laboratory Instruments - I	CO 1: pH meter Digital Balance
			CO 2: Clamp meter Dimmerstat
			CO 3: Colorimeter
			CO 4: Laser source, Sodium source, Mercury source
			CO 5: Industrial Trainer Kit IR lamp
			CO 6: Incubator Vacuum/Suction Pump

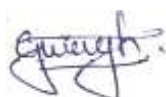
Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
S.Y.B.Voc Sem I	EAP31	Fundamentals of Computer	CO 1: Understand various parts and their functions of Computer
			CO 2: Understand different types of storage devices
			CO 3: Understand various I/O devices
			CO 4: Know the Installation of operating system and software
			CO 5: Understand troubleshooting of Computer
			CO 6: Make use of MS- Office for office atomization
	EAP32	Entertainment Electronics	CO 1: Understand various sensor and their application
			CO 2: Understand various parts and their functions of CD/DVD Player
			CO 3: Understand working of Amplifier, Tape Recorder
			CO 4: Understand function and types of Speaker
			CO 5: Understand working of Tape Recorder
			CO 6: Understand various parts and their functions of DVD Player
	EAP33	Refrigerator and Air Conditioning	CO1: Understand various parts their functions of Household Refrigerator
			CO 2: Understand troubleshooting of Refrigerator
			CO 3: Understand various parts their functions of Air Conditioner
			CO 4: Understand troubleshooting and maintenance of Air Conditioner
			CO 5: maintenance of Refrigerator
			CO 6: Install Air Conditioner
S.Y.B.Voc Sem II	EAP41	Business Communication	CO 1: Understand barriers in effective communication
			CO 2: Acquire different soft skills for Business Communication
			CO 3: Understand New Technologies in Business Communication
			CO 4: Acquire skill in using social media network
			CO 5: Discuss & Study Social Media Network

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
	EAP42	Electrical Machines	(Twitter, Face book, LinkedIn, You
			CO 6: E-mail communication
			CO 1: Understand the student to use & principle of different measuring electrical Instruments
			CO 2: Know various D.C. Motors construction, working principle & its application.
			CO 3: Know various single phase transformer construction principle and transformer equation & small transformer rewinding
			CO 4: Know various single phase motors, construction working principle, applications
			CO 5: Know various speed controls of single phase motors
	EAP43	Lab Instruments - I	CO 6: Students able to rewinding the different single phase motors
			CO1: Understand the working principle, construction, and uses of pH meter
			CO 2: Understand the working principle, construction, and uses of Digital Balance
			CO 3: Understand the working principle, construction, and uses of Clamp meter
			CO 4: Understand the working principle, construction, and uses of Dimmer-stat, Colorimeter
			CO 5: Understand the working principle, construction, and uses of Laser source, Sodium & Mercury source
			CO 6: Understand the working principle, construction, and uses of IR lamp, Incubator, Vacuum/ Suction Pump
T.Y. B.Voc Sem I	EAT51	Entrepreneurship Development	CO 1: Entrepreneur and Entrepreneurship
			CO 2: Business Opportunity Identification and Preliminary Project Report
			CO 3: Business Plan
			CO 4: Institutional Support to New Venture
			CO 5: Financial Assistance for small Enterprise
			CO 6: Self-employment Scheme of Government of Maharashtra

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
	EAT52	Lab Instruments- II	CO 1: CRT
			CO 2: Function generator
			CO 3: Projector Gas sensing unit
			CO 4: Centrifuge system Spin coater
			CO 5: Laminar Air Flow Cabinet
			CO 6: Autoclave
	EAT53	Lab Instrument s- III	CO 1: Muffle Furnace
			CO 2: UV Spectrophotometer
			CO 3: G. M. Counter
			CO 4: Inverter, UPS
			CO 5: Intercom Machine
			CO 6: CCTV
T.Y.B.Voc Sem II	EAT61	Research Methodol ogy	CO 1: Identifying and formulating the problem, Techniques.
			CO 2: Developing a research plan
			CO 3: Methods of data collection
			CO 4: Analyzing data
			CO 5: Using computers in research
			CO 6: Review of Research Work Scope of the work
	EAT62	Professiona l Practices	CO 1: Field Visits
			CO 2: Market Survey
			CO 3: Lectures by Professional
			CO 4: Banking & Finance
			CO 5: Business Communication
			CO 6: Seminar
	EAT63	Renewa ble energy Sources	CO 1: An Introduction to Energy Sources
			CO 2: Photothermal Applications
			CO 3: Photovoltaic systems
			CO 4: Energy from Biomass
			CO 5: Wind Energy
			CO 6: wind machines
T.Y.B.Voc Sem I	EAP51	Entrepren eurship	CO 1: The ability to identify entrepreneurial opportunities that exist

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
		Development	CO 2: create entrepreneurial opportunities through the invention
			CO 3: create entrepreneurial opportunities through the development new ideas
			CO 4: create entrepreneurial opportunities through the products and services
			CO 5: create entrepreneurial opportunities through the new industries, infrastructures
			CO 6: create entrepreneurial opportunities through the ways of doing business
	EAP52	Lab Instruments - II	CO 1: Understand the working principle, construction, and uses of Cathode Ray Tube Cathode Ray Oscilloscope
			CO 2: Understand the working principle, construction, and uses of Function generator
			CO 3: Understand the working principle, construction, and uses of Projector Gas sensing unit
			CO 4: Understand the working principle, construction, and uses of Centrifuge system Spin coater
			CO 5: Understand the working principle, construction, and uses of Laminar Air Flow Cabinet
			CO 6: Understand the working principle, construction, and uses of Autoclave
	EAP53	Lab Instruments- III	CO1: Understand the working principle, construction, and uses of UV Spectrophotometer
			CO 2: Understand the working principle, construction, and uses of Muffle Furnace
			CO 3: Understand the working principle, construction, and uses of G. M. Counter
			CO 4: Understand the working principle, construction, and uses of Battery, Inverter
			CO 5: Understand the working principle, construction, and uses of UPS, Intercom
			CO 6: Understand the working principle, construction, and uses of CCTV
T.Y.B.Voc	EAP64	Electrical	CO 1: Acquire technical and manipulative skills

Class	Subject code	Title	Cos: After successful completion of this course, student will be able to
Sem II		Work Shop	in using laboratory equipment, tools, and materials.
			CO 2: Demonstrate an understanding of laboratory procedures including safety, and scientific methods
			CO 3: Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.
			CO 4: To train people to design and build domestic electrical/electronic equipment using modern digital techniques
			CO 5: Acquire practical knowledge
			CO 6: To know the applications of Solar energy
	EAP65	Industrial Training	CO 1: To provide comprehensive learning platform to students where they can enhance their employability skills and become job ready along with real corporate exposure
			CO 2: To enhance students' knowledge in one particular technology
			CO 3: To Increase self-confidence of students and helps in finding their own proficiency
			CO 4: To cultivate student's leadership ability and responsibility to perform or execute the given task.
			CO 5: Acquire practical knowledge
			CO 6: To provide learners hands on practice within a real job situation




HOD, B.Voc.
EAMR



IQAC Coordinator




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