NUTAN MAHAVIDYALAYA,SAILU-431503
DIST.PARBHANI
Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.
NAAC Re-accredited B+ Grade

Dr.Uttam Rathod
Principal
Mobile No. 9421383319
Email - principalnutan@rediffmail.com

CROSS-CUTTING ISSUE (Gender Human Values)

Nutan Mahavidyalaya, sailu is affiliated to Swami Ramanand Teerth Marathwada University Nanded .Hence the planning and designing of the curriculum is the part of affiliating university while implementation is the part of college. The curriculum designed by the affiliated university has the following cross cutting issues subject of Physics

Subject: Physics Sem III

B. Electrical Measurements

Learning objectives: *This is a skill based course and is aimed to acquire skills related to characteristics and usage of the instruments for measurement of the electrical quantities like voltage, current, impedance and various other quantities using analogue and digital meters. The students will learn the skills selecting meters of proper scales, connecting and handling them and also to use them. As this is a skill based course therefore it is expected that students will spend nearly half of the time in laboratory for gaining hands-on training. This course is the pre-requisite for several advanced courses in physics, chemistry, and in almost all other disciplines. Pre-requisite for this course is the knowledge of physical quantities and their measurement.*

UNIT-I Basic of Measurement Instruments accuracy, Precision, Sensitivity, Resolution range, Errors in measurements, Loading effect.

UNIT-II Multimeter

Principle of measurement of dc voltage and dc current, ac voltage, ac current, Resistance, Specifications of a Multimeter and their significance.

UNIT-III Voltmeter Principles of voltage measurement (block diagram only), Sensitivity, Specifications of an electronic voltmeter and its significance, Ac millivoltmeter, Types of ac millivoltmeter.

UNIT-IV Milliammeters Principle of current measurement, Measurements of dc current, Ac current, Micro ammeters

UNIT-V Impedance Bridges Block diagram of bridge, Working principles of basic (balancing type) RLC bridge, Specifications of RLC bridge.

UNIT-VI Digital Instruments Principle and working of digital meters, Comparison of analogue and digital instruments, Characteristics of digital meter, Working principle of digital voltmeter, Block diagram and working of digital Multimeter.

PRINCIPAL
Nutan Mahavidyalaya
Sailu, Dist. Parbhani

Subject: Physics Sem IV CROSS-CUTTING ISSUE (Gender Human Values)

A. Electronic Devices and Equipments

UNIT-I Basic Electricity Principles Resistance, Inductance, Capacitor, Colour code, Voltage, Current, Power, Ohm's law, Kirchhoff's law,
Junction diode, Transistor
UNIT-II Understanding Electronic circuits AC and DC sources, Rules to analyze DC sourced electronic circuits, Current and voltage drops across the
DC circuit elements, Rectifiers (half wave, full wave & bridge),Voltage regulator using Zener diode
UNIT-III Transistor applications CE amplifier, its analysis and performance, CB amplifier, its analysis and performance, Hartley oscillator,
Colpitts oscillator and their performance, Wien bridge oscillator and its performance
UNIT-IV Signal Generators Block diagram, explanation and specification of low frequency signal generators, Pulse generator,
Function generator
UNIT-V Cathode Ray Oscilloscope Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration(only explanation), Use of CRO for measurement of ac and dc voltages, time period, frequency, specialfeatures of dual trace CRO, study of Lissajous figures

PRINCIPAL
Nutan Mahavidyalaya
Sailu, Dist. Parbhani

NUTAN MAHAVIDYALAYA,SAILU-431503
DIST.PARBHANI
Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.
NAAC Re-accredited B+ Grade

Dr.Uttam Rathod
Principal
Mobile No. 9421383319
Email - principalnutan@rediffmail.com

CROSS-CUTTING ISSUE (Environment and Sustainability)

Nutan Mahavidyalaya, sailu is affiliated to Swami Ramanand Teerth Marathwada University Nanded .Hence the planning and designing of the curriculum is the part of affiliating university while implementation is the part of college. The curriculum designed by the affiliated university has the following cross cutting issues subject of Physics

Subject: Physics Sem V

A. Renewable Energy and Harvesting

Learning Objectives: *Aim of this course is to introduce and create awareness among the students about use of the non-conventional energy sources such as solar energy, wind energy, tidal energy, biomass, etc. After completing this course the students will not only gain knowledge of various non-conventional energy sources but also get hands-on experience of utilizing them in real life. As this course is primarily of hnads-on trianing type, therefore, the students will be trained to harvest these non-conventional energy sources and design their own gadgets to convert and use them for their house hold purposes.*

Uuit 1 Fossil Fuels and Alternate Sources of Energy Fossile fuels and Nuclear Energy, Need of renewable energy, Non-conventional energy sources, Wind Energy, Tidal Energy, Solar Energy, Biomass Energy.

Unit 2 Solar Energy and Harvesling Importance, Storage of Solar Energy, Applications of Solar Energy, Solar Water Heater, Solar Distillation, Solar Cooker, Solar Greenhouses, Solar cell charecterstics of Photovoitaic (pv) Systems.

Unit 3 Wind Energy Harvesling Fundameials of Wind Energy, Wind Turbines and Different Electrical Machines in Wind Turbines, Power Eleclronic Interfaces and Grid Interconnection Technologies.

Unit 4 Ocean Energy

Oscean Enersy Potential against Wind and Solar Enevgy, Wave Energy Devices. Geothermal Energy Technologies, Hydropower Technologies.

PRINCIPAL
Nutan Mahavidyalaya
Sailu, Dist. Parbhani