

VALUE ADDED COURSES ON Knowledge of Basic Instrumentation Skill”

Code-24VACPHY C1

(From Date 01-03-2025 TO 31-05-2025)



Knowledge of Basic Instrumentation Skill”

To control the parameters in a process or in a particular system, devices such as microprocessors, microcontrollers or PLCs are used, but their ultimate aim is to control the parameters of a system. Presenting results to senior research staff, researching and writing papers, reports and reviews. Keeping up to date with relevant scientific and technical developments

The objective of the program

The main objective of this course is to create awareness among students about the new technologies arising day to day. It updates the required knowledge and improve the applicability. The Practical work related with data interpretations therefore energy skill plays a pivotal role in increasing their employability.

**COURSE COORDINATOR : DR. AMAN KUMAR
(Assistant Professor)
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Department of Physics
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REGISTRATION FORM

For

Course: Knowledge of Basic Instrumentation Skill
CODE -24VACPHY C1

Dated From- (01-03-2025 to 31-05-2025)

Student's name:.....

Enrollment No.:

Programme:.....

Year/Semester:

Faculty/ College/Department.....

Contact No.:.....

Email Id:

Signature:.....

Course Coordinator



Department of Physics

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Syllabus of Value Added Course

Course Name: Knowledge of Basic Instrumentation Skill	CODE VAC- 24VACPHY C1
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Objectives: To acquire basic knowledge about Basic of Measurement, Electronic Voltmeter, Oscilloscope and Signal and pulse Generators.

Course Outcome(s):

After completion of this course students would be able to

1. To understand standards of measurements and calibration.
- 2 To learn measurement of temperature using: Non - electrical, Electrical and Radiation Methods.
- 3 To learn Measurement of flow using: Venturi tube, Pitot tube and Rotameter.
- 4 To understand characteristics of sound and to know typical sound measuring system.
- 5 To learn Measurement of magnetic field by using search coil method and Hall gauge meter.

Unit I: Basic of Measurement: Instruments accuracy, precision, sensitivity, resolution range etc. Errors in measurements and loading effects.

Multimeter: Principles of measurement of dc voltage and dc current, ac voltage, ac current and resistance. Specifications of a multimeter and their significance.

Unit II: Electronic Voltmeter: Advantage over conventional multimeter for voltage measurement with respect to input impedance and sensitivity. Principles of voltage, measurement (block diagram only). Specifications of an electronic Voltmeter/ Multimeter and their significance.

AC mill voltmeter: Type of AC millivoltmeters. Block diagram ac millivoltmeter, specifications and their significance.



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Unit III: Oscilloscope: Block diagram of basic CRO. CRT, electrostatic focusing and acceleration (Explanation only– no mathematical treatment), brief discussion on screen phosphor, visual persistence. Time base operation, synchronization. Front panel controls. Specifications of CRO and their significance.

Unit IV: Digital Instruments and Multimeter: Comparison of analog & digital instruments. Characteristics of a digital meter. Working principles of digital voltmeter. Block diagram and working of a digital multimeter.

Course Coordinator

Dr. Aman Kumar

Assistant Professor

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