

VOCATIONAL COURSE - Basic Instrumentation Skills -IV		
Programme: <i>Vocational Course</i>	Year: II	Semester: IV Vocational
Subject: Physics		
Course Code:	Course Title: Basic Instrumentation Skills -IV	
Credits: 03	Vocational (Experiments/hands on training)	
Max. Marks: 100 External Exam: 75 Internal Assessment: 25	Min. Passing Marks: 33	
Total No. of Lectures-Tutorials-Practical (in hours per week): 3-0-0		
Unit	Topic	No. of Lectures
Unit I	Cathode Ray Oscilloscope: Block diagram of basic CRO. Construction of CRT, Electron gun, electrostatic focusing and acceleration (Explanation only – no mathematical treatment), brief discussion on screen phosphor, visual persistence & chemical composition. Time base operation, synchronization. Front panel controls. Specifications of a CRO and their significance. Use of CRO for the measurement of voltage (dc and ac frequency, time period). Special features of dual trace, introduction to digital oscilloscope, probes. Digital storage Oscilloscope: Block diagram and principle of working.	20
Unit II	Signal and pulse Generators Block diagram, explanation and specifications of low frequency signal generator and pulse generator. Brief idea for testing, specifications. Distortion factor meter, wave analysis.	10
Unit III	Impedance Bridges Block diagram of bridge. Working principles of basic (balancing) RLC bridge, Specifications of RLC bridge, Block diagram and working principle as of a Q-meter, Digital LCR bridges.	15

Suggested Reading

1. B L Theraja : A text book in Electrical Technology
2. M G Say : Performance and design of AC machines
3. S. Salivahanan& N. S.Kumar : Electronic Devices and Circuits, , 3rd Edn
4. Shashi Bhushan Sinha, Handbook of Repair and Maintenance of Domestic Electronics Appliances hand book.