EI110 INTRODUCTION TO ELECTRONICS & INSTRUMENTATION ENGINEERING 2-0-0

COURSE OBJECTIVE:

• To familiarize the students with the evolution and basics of Electronics & Instrumentation Engineering.
• To introduce the various sub-domains of Electronics & Instrumentation Engineering

COURSE CONTENT:

INTRODUCTION

General overview of Electronics Engineering and its sub domains, History of Electronics Engineering, Applications of electronics, Electronic components, Very Large Scale Integration (VLSI)

STATISTICAL FUNDAMENTALS:

Basic characteristics of measuring devices, types of errors and their statistical analysis, accuracy, precision and ratings of instruments, fundamental, derived and international systems of units and their conversion. Calibration, Primary and Secondary Standards.

INSTRUMENTATION FUNDAMENTALS

Generalized Configuration & Fundamental Description of Measuring Instruments, Principle of working of various instruments used to measure basic electronic parameters, elements of basic instrumentation systems.

SCOPE & OPPORTUNITIES

Overview of Electronics Instruments Industries in India and Abroad; Current status, contribution to GDP, export and growth potential, organizational structure, manpower requirement, and future prospects. Employment opportunities, Nature of Job, risks and challenges involved, Exploration of career and professional development opportunities, Latest trends in VLSI Design.

INNOVATION AND RESEARCH

Overview of notable National Research Organizations/ Authorities/ Societies/ Forums such as etc. Emerging areas and new technologies in the field of Electronics & Instrumentation Engineering, Overview of Peer Reviewed Journals, and Magazines Published in the field of Electronics & Instrumentation Engineering, Systematic Ways of Research and Objectives of Research.

COURSE OUTCOMES

After successful completion of course, students are expected to
1. To understand the fundamentals of electronics & instrumentation.
2. To become aware of the scope, opportunities and trends in the various sub-domains of electronics & instrumentation.

EVALUATION

Evaluation will be continuous an integral part of the class only through internal assessment

REFERENCES:

Bernard M. Oliver, J.M. Cage, Electronic Measurement and Instrumentation, McGraw Hill
Albert D Helfrick, William D Cooper, Modern Electronics Instrumentation and Measurement Techniques, Pearson Ed
All other course materials will be provided by the instructor