

## Lecture Plan

**Name of Subject: Intelligent Instrumentation**

**Class: B.Tech (EIC)**

**Semester: 8**

| <b>Unit</b> | <b>Sub unit</b> | <b>Topic</b>  | <b>No of Lectures</b> |
|-------------|-----------------|---|-----------------------|
| 1           | 1.1             | Definition of an intelligent instrumentation system                                 | 1                     |
|             | 1.2             | Static characteristics of intelligent instrumentation                               | 3                     |
|             | 1.3             | Dynamic characteristics of intelligent instrumentation                              | 3                     |
|             | 1.4             | Feature and Block Diagram of an intelligent instrumentation                         | 2                     |
| 2           | 2.1             | Serial & parallel interfaces, serial communication standards                        | 4                     |
|             | 2.2             | parallel data bus, IEEE 488bus  | 3                     |
|             | 2.3             | Local area networks (LANs): Star networks, Ring & bus networks                      | 2                     |
|             | 2.4             | Fiber optic distributed networks.   | 2                     |
| 3           | 3.1             | Introduction to LabView   | 2                     |
|             | 3.2             | Graphical programming data flow & graphical programming techniques in LabView       | 3                     |
|             | 3.3             | loops and charts, arrays, clusters and graphs                                       | 3                     |
|             | 3.4             | Case and sequence structure, formula nodes, string and file Input/Output in Labview | 3                     |
| 4           | 4.1             | Basic issues of interfacing;  | 1                     |
|             | 4.2             | Address decoding, Data transfer control   | 3                     |
|             | 4.3             | A/D converter, D/A converter; other interface consideration.                        | 3                     |
| 5           | 5.1             | Introduction to DSP software  | 2                     |
|             | 5.2             | Measurement filters   | 2                     |
|             | 5.3             | Wavelets, windows, curve fitting probability  | 3                     |