**Jaipur Engineering College & Research Centre**

Department of Electrical Engineering

COURSE PLAN

(SESSION-2017-18)

Branch: - Electrical Engineering Degree: B.Tech.

**Subject:** POWER SYSTEM INSTRUMENTATION Semester: VI

L/T/P: 3/1/0

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| **Lect.No.** | | **Unit No. & Name** | **Topic planned for the session** |
|  | | Unit1.  Transducers | Introduction to measurement, General model of instrument |
|  | | Introduction to Transducer & Classification |
|  | | Construction & Operating Characteristics of active and digital  transducers |
|  | | Measurement of temperature, pressure, Noise level |
|  | | Measurement of displacement, acceleration |
|  | | Instrumentation for strain, velocity, acceleration |
|  | | Instrumentation for force, torque |
|  | | Numerical |
|  | | Revision |
|  | | Unit2.  Theory of Errors | Accuracy and precision, systematic and random errors |
|  | | limits of error |
|  | | probable error and standard deviation |
|  | | Gaussian error curves, combination of  errors. |
|  | | Numerical |
|  | | Numerical |
|  | | Revision |
|  | | Unit3.  Signal Conditioning | Instrumentation amplifiers |
|  | | Analog multipliers, analog dividers, |
|  | | function generators, timers, |
|  | | sample and hold, optical and magnetic isolators. |
|  | | Numerical |
|  | | Revision |
|  | Unit4.  Power System Instrumentation-I | Measurement of voltage, current |
|  | Measurement of phase angle, frequency |
|  | Measurement of active power and reactive power in power plants |
|  | Measurement of Energy meters and multipart tariff meters |
|  | Basic idea of LT & HT panel’s |
|  | Revision |
|  | Revision |
|  | **Unit 5**  Power System Instrumentation-II | Capacitive voltage transformers |
|  | Example |
|  | transient behavior |
|  | Current Transformers for measurement |
|  | Example |
|  | transient response |
|  | Composite errors |
|  | Example |
|  | Revision |

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