

INTEGRAL UNIVERSITY, LUCKNOW  
DEPARTMENT OF ELECTRONICS AND COMM.ENGINEERING  
**LECTURE PLAN**

**NAME:** QAZI S.AHMAD

**DESIGNATION:** Asst.Professor

**SUBJECT/CODE:** MEASUREMENT AND INSTRUMENTATION/IEC-403

**BRANCH/SECTION:** ECE

**YEAR/SEMESTER:** II/IV<sup>TH</sup>

**Session:** 2013-14

Lecturer No.	Name of the Topics	Unit no.	Date of delivery	Remarks
1.	Introduction:Electronic instruments system, standard of mass,length and volume	I		
2.	Standard of time,frequency,temperature and luminous intensity,IEEE standards	I		
3.	Analysis of instrument system,types of errors	I		
4.	Minization of error and frequency response,	I		
5.	Best measured value, accuracy and presicion ,Calibration of instrument system	I		
6.	Transduces:classification,displacement,resistive	I		
7.	Capacitive,inductive,Piezo-electric and Piezo-resistive transducer	I		
8.	Photo electric transducer, Photo –voltaic transducer ,crystal oscillator	I		
9.	Bridges:AC and DC bridges,wheat stone ,Kelvin and guarded wheat stone bridge	II		
10.	Maxwell, Maxwell double and Hays bridge	II		
11.	Schering bridge and wien bridge	II		
12.	Problems in high frequency measurement, measurement of RF power and RF voltage	II		
13.	RF impedance measurement,Q-meter,	II		
14.	DVM,Time,frequency and phase measurement	II		
15.	Measurement on CRO,group delay measurement	II		
16.	Digital storage oscilloscope,numerical	II		

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Lecturer No	Name of the Topics	Unit no.	Date of delivery	Remarks
17.	Measurement of temperature resistance thermometer	III		
18.	Thermocouple,IC-sensor	III		
19.	Radiation Pyrometer, measurement of Pressure	III		
20.	Measurement of Fluid-flow,Force and Torque	III		
21.	Measurement of Displacement,linear velocity	III		
22.	Measurement of angular velocity, seismic mass	III		
23.	Measurement of acceleration,different types of accelerometer	III		
24.	Measurement of amplifier and receiver characteristics	IV		
25.	Data distribution and Bus structure	IV		
26.	Rs-232,IEEE-488 interface	IV		
27.	PC based acquisition system	IV		
28.	Data transmission, convertor Digital to Analog	IV		
29.	Analog to Digital convertor, their types	IV		
30.	Pulse modulation technique	IV		
31.	Telemetry,Tracking and command	IV		
32.	Frequency synthesized signal generator, frequency divider generator	V		
33.	Signal generator,sweep frequency generator	V		

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Lecturer No.	Name of the Topics	Unit no.	Date of delivery	Remarks
34.	Pulse and square wave generator,Function generator	V		
35.	Display devices,signal analyzer	V		
36.	Wave analyzer,harmonic distortion analyzer	V		
37.	Spectrum analyzer	V		
38.	Microscopic based instrumentation	V		
39.	Computer controlled test system	V		
40.	Fiber optic measurements	V		

- Books:**
1. Albert Helfric and Cooper/Modern Electronic Instrumentation & Measurement Techniques/PHI
  2. E.O. Doebelin/Measurement System/MC Graw Hill
  3. Oliver & J.M Cage/ Electronic Measurement & Instrumentation /MC Graw Hill
  4. EMI, J.B.Gupta
  5. A.K.Sahwney