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| **Before MIDS** | | | |
| **Week#** | **Topic** | **Topic#** | **Resource** |
| 1 | **Chap#2 Measurement Errors**  Design Problems  Assignment 1  Quiz 1 | 2.1 Gross errors & systematic errors  2.2 Absolute errors & Relative errors  2.3 Accuracy, Precision, Resolution, and Significant Figures  2.4 Measurement error combinations  2.5 Basics of Statistical Analysis | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 2 | **Chap#3 Electromechanical Instruments**  Design Problems  [Assignment 1](https://drive.google.com/open?id=1op3AMDGJZxpv8kjexItmnSqva0B5SpPG)  Quiz 1 | Introduction  3.1 Permanent-Magnet Moving-Coil Instrument  3.1.1 Deflection Instrument Fundamentals  3.1.2 PMMC Construction  3.1.3 Torque Equation and Scale | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 3 | **Chap#3 Electromechanical Instruments**  Design Problems  Assignment 1  Quiz 1 | 3.2 Galvanometer  3.3 DC Ammeter  3.3.1 Ammeter Circuit  3.3.2 Ammeter Scale  3.3.3 Shunt Resistance  3.3.4 Swamping Resistance  3.3.5 Multirange Ammeters | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 4 | **Chap#3**  **Electromechanical Instruments**  Design Problems  Assignment 1  Quiz 1 | 3.4 DC Voltmeter  3.4.1Voltmeter Circuit  3.4.2 Swamping Resistance  3.4.3 Voltmeter Sensitivity  3.4.4Multi-range Voltmeter  3.5 Rectifier Voltmeter  3.5.1 PMMC instrument on AC  3.5.2 Full wave rectifier voltmeter  3.5.3 Half wave rectifier voltmeter | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 5 | **Chap#3**  **Electromechanical Instruments**  Design Problems  Assignment 1  Quiz 1 | 3.6 Rectifier Ammeter  3.8 Series Ohmmeter  3.9 Shunt Ohmmeter | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 6 | **Chap#3**  **Electromechanical Instruments**  Design Problems  Assignment 1  Quiz 1 | * 1. Electrodynamic Wattmeter   Design problems | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 7 | **Chap#4 Analog Electronic Volt-Ohm-Milliammters**  Design Problems  [Assignment 2](https://drive.google.com/open?id=1op3AMDGJZxpv8kjexItmnSqva0B5SpPG)  Quiz 2 | Introduction  4.2 Operational Amplifier Voltmeter circuits  4.3 Ohmmeter Function In Electronic Instruments  4.4 AC Electronic Voltmeters | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 8 | **Chap#4 Analog Electronic Volt-Ohm-Milliammters**  Design Problems  Assignment 2  Quiz 2 | 4.5 Current Measurement with Electronic Instruments  4.7 Multimeter Probes | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |

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| **After MIDS** | | | |
| **Week #** | **Topic** | **Topic#** | **Resource** |
| 9 | **Chap#10; Transducers**  Design Problems  [Assignment#3](https://drive.google.com/open?id=1pQYwEznpDp-ZKjdqiTyt5Rqqd8rXXtAU) | 10.1:Instructional Objectives  10.2: Introduction  10.3 Selection Criteria  10.4 Resistance-changing Transducers  10.5 self-Generating Transducers  10.6 Electromagnetic Flow meter  10.7 Inductive Transducer  10.8 Capacitive Transducer  10.9 Phototransistors & photodiodes | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (1st edition)  **Assignment:** Internet resource |
| 10 | **Chap#5; Digital Instrument Basics**  Design Problems  [Assignment#4](https://drive.google.com/open?id=1PSD_nxBWLHHN9ZXWZOIH5OrvmQJVda4l) | 5.1 Basic Logic gates  5.2 Flip-Flops  5.3 Digital Displays  5.4 Digital Counting  5.5 Analog-to-Digital Converter  5.6 Digital-to-Analog Converter | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 11 | **Chap#6; Digital Voltmeters and Frequency Meters**  Reading assignment + Viva voice+ Design Problems | 6.1 Digital Voltmeter Systems  6.1.1 Ramp-type Digital Voltmeter  6.1.2 Dual Slope Integrator DVM  6.1.3 Range Changing  6.2 Digital Multimeters  6.2.1 Basic Hand Held Digital Multimeter  6.2.2 High Performance Hand held DMMs  6.2.3 Bench type DMM  6.2.4 Comparison of Digital and Analog Multimeter  6.3 Digital Frequency Meter System  6.3.1 Basic Frequency Meter  6.3.2 Range changing  6.4 Frequency Meter Accuracy  6.4.1 Range Selection error  6.4.2 Accuracy Specification  6.5 Time and ratio measurements  6.5.1 Pulse time measurement  6.5.2 Frequency Ratio measurement  6.6 Counter Input stage | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 12 | **Chap#7; Low, High and Precise Resistance Measurements**  Design Problems | Introduction  Medium range resistance measurement  7.1 Voltmeter and Ammeter Methods  7.2 Substitution Methods  7.3 Wheatstone Bridge  7.4 Low Resistance Measurement( Kelvin Bridge Method) | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 13 | **Chap#7; Low, High and Precise Resistance Measurements**  **Chap#8; Inductance and capacitance measurements**  Design Problems | 7.6 High-resistance measurement  7.6.1 Voltmeter and Ammeter Method  7.6.2 Guard wire and guard Ring  7.6.3 Wheatstone Bridge Measurement of High Resistance  7.7 High Resistance Measuring Instrument  7.7.1 Hand-cracked Megaohmmeter  8.1 RC and RL equivalent ciruits  8.2 AC Bridge Theory  8.4.2 Maxwell Bridge | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |
| 14 | **Chap#8; Inductance and capacitance measurements**  Design Problems | 8.4 Inductance bridges  8.4.1 Inductance comparison bridge  8.4.3 Hay bridge  Owen’s Bridge | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition)  **Owen's bridge:** Internet Resource |
| 15 | **Chap#8; Inductance and capacitance measurements**  Design Problems | 8.3 Capacitance Bridges  8.3.1 Simple capacitance bridge  8.3.2 Series resistance bridge  8.3.3Parallel resistance bridge  Wein Bridge(Measurement of Frequency)  8.9 Q-meter  8.9.1 Q-meter operation  8.9.2 Q-meter controls  8.9.3 Residuals  8.9.4 Commercial Q meter  8.9.5 Measuring procedures  Data Acquisition System | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition)  **Data acquisition system:** Internet Resource |
| 16 | **Chap#9; Cathode-Ray Oscilloscopes**  **Chap#10 Special Oscilloscope**  **Chap#11 Signal Generator**  Design problems | 9.1 Cathode ray tube  9.2 Deflection Amplifiers  9.3 waveform Display  9.4 Oscilloscope Time Base  9.5 Dual trace oscilloscope  9.6 Oscilloscope trace  9.7 Measurement of voltage, frequency and phase  9.8 Pulse measurement  9.9 Oscilloscope Probes  9.10 Display of Device characteristics  9.11 X-Y and Z Displays  9.12 Oscilloscope specifications and performance  10.4 Digital Storage Oscilloscope  11.1 Low-Frequency Signal generator  11.2 Function Generators  11.3 Pulse Generators  11.4 RF Signal Generators  11.5 Sweep Frequency Generators | **Text Book:** Electronic Instrumentation and Measurements by David A.Bell (second edition) |