



BENHA UNIVERSITY
FACULTY OF ENGINEERING (SHOUBRA)
ELECTRONICS AND COMMUNICATIONS ENGINEERING



CCE 304

Measurements and Instrumentations
(2022 - 2023) term 231

Lecture 0: Course Introduction.

Dr. Ahmed Samir

<https://bu.edu.eg/staff/ahmedsaied>

Outlines

Course Information and Evaluation

Course Introduction

Course Content


Course Spec.

Course Information and Evaluation

Instructor:	Prof. Mohamed Tarek Elewa, Dr. Ahmed Samir
Lectures:	Sunday G1 9:00, G2 10:40
Teaching Assistant:	Eng. Engy
Textbooks:	<ul style="list-style-type: none"> ❖ Electronic Instrumentation and Measurements, David A. Bell. ❖ Mechatronics: Electronic Control Systems in Mechanical Engineering, W. Bolton.
Credit:	100 Marks

Assessment	Week	Weight
Midterm Examination1	7	30 %
Midterm Examination2	12	20%
Home assignments, Quizzes, and Reports	2, 4, 11	5%
Mini Project	8&14	5 %
Final Examination	(As Schedule)	40 %
Total		100 %

Contact:

- ❑ E-mail: ahmed.saied@feng.bu.edu.eg
- ❑ Office hour: Sunday, Wednesday.
- ❑ Mobile: 011 5049 7002 
- ❑ Course Handout:
[here](#)



Measure Material !

Outlines

○ **Course Information and Evaluation**

○ **Course Introduction**

○ **Course Content**

○ **Course Spec.**

Course Introduction: Measurements and Instrumentations

- ▶ This course will cover mainly the **electronic instruments**, which are useful for measuring either **electrical quantities or parameters**.



Voltmeter



Ammeter



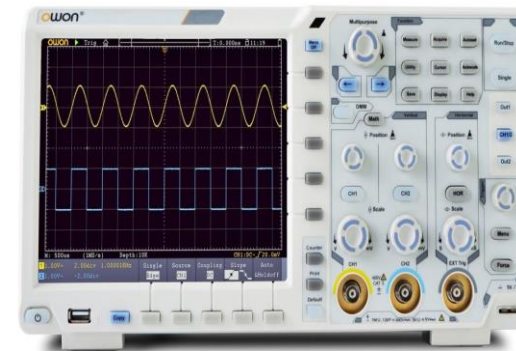
Ohmmeter



Digital Multimeter



Function generator



Oscilloscope

Outlines

○ **Course Information and Evaluation**

○ **Course Introduction**

○ **Course Content**

○ **Course Spec.**

Course Content:

Measurements and Instrumentations

The course consists of the following parts: **(The first seven weeks)**

1) Measurement Errors

2) Electromechanical Instruments:

- Permanent Magnet Moving Coil (PMMC).
- DC Voltmeter, DC Ammeter and Ohmmeter.
- AC Voltmeter, AC Ammeter.

3) Digital Type Multimeter:

- Digital Voltmeter.
- Digital Frequency Meter.

4) Sensors and Transducers: (To sense physical quantities)

- Position and Displacement Sensors.
- Force Sensors
- Temperature Sensors

Outlines

○ **Course Information and Evaluation**

○ **Course Introduction**

○ **Course Content**

○ **Course Spec.**

Course Spec. Measurements and Instrumentations

