

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



ECE 444

Industrial Electronics

(2022 - 2023)

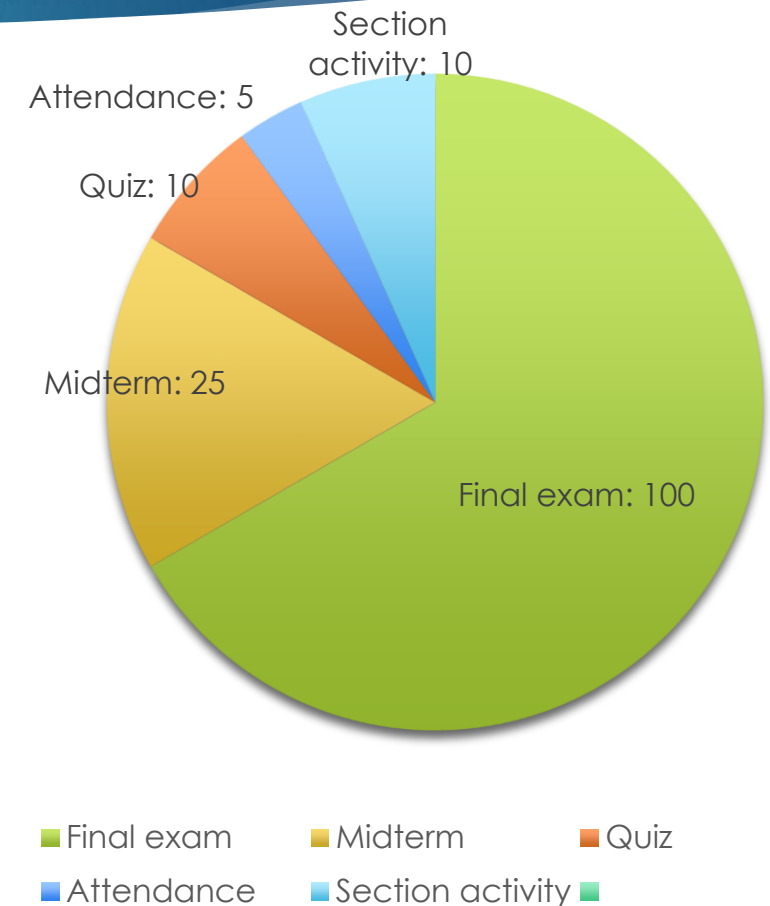
Lecture 0: Course Introduction.

Dr. Ahmed Samir

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

Course Information

Instructor:	Dr. Ashraf Hafez, Dr. Ahmed Samir
Lectures:	Sunday , Wednesday
Teaching Assistant:	Eng. Anas
Textbooks:	<ul style="list-style-type: none"> ❖ Curtis D. Johnson, "Process Control Instrumentation Technology", 8th ed., Pearson Prentice Hall 2006. ❖ J. R. Hackworth & F.D. Hackworth, Jr. "Programmable Logic Controllers: Programming methods & Applications", Prentice Hall 2003 ❖ Louis E. Frenzel, Jr. "CONTEMPORARY ELECTRONICS: FUNDAMENTALS, DEVICES, CIRCUITS, AND SYSTEMS", McGraw Hill 2014
Credit:	150 Marks



Course Topics

1- Introduction to process control.

2- Analog signal conditioning..

3-Digital signal conditioning.

4- Controller Principles.


5- Analog Controllers.

6- Programmable Logic Controller (PLC).

7- SCADA systems.

8- Power Electronics.

Contact:

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



IE Material !

Course Spec.

1- Course Data

Course Code: ECE444

Course Title: Industrial Electronics

Semester/Year: First / 2022-2023|

Specialization: Electronics and Communication

Total Hours: 5

Lecture: 3 **Practical/practice:** 2

2- Course Objectives

For students undertaking this course, they will be able to:

1. Get familiar with the application of electronics in industry.
2. Know how to select sensors depends on application specifications.
3. Manipulate the uncertainty and nonlinearity of sensors.
4. Design the analog and digital signal conditioning A.
5. Understand the different types of controllers, discontinuous and continuous.
6. Know how to select a suitable type of controller for a certain application.
7. Design and implementation of analog controllers.
8. Apply the PLC in industry automation.
9. Understand the need for the use of SCADA systems.
10. Know the basic power electronics devices and circuits.