IRE 216: Sensor Technology Sessional

Section A: General Information

1. Course Title   Sensor Technology Sessional
2. Type of Course   Special
3. Credit Hour   1.00
4. Pre-requisite Course(s) N/A

Section B: Course Details

1. Course Content Practical Classes based on the Topics Covered in IRE 216.

2. Course Objectives

- To provide practical knowledge of sensor technology, features and characteristics of a sensor
- Select the right sensor for a given application/ project.

3. Knowledge required:
4. Course Outcomes

CO No.	CO Statement	Corresponding PO(s)*	Domains and Taxonomy Level(s)**	Delivery Method(s) and Activity(-ies)	Assessment Tool(s)
1	Attain efficient project management, leadership, problem solving, communication and documentation skills	PO 9, PO 10, PO 11, PO 12	C2, C3, A4, P7	Lecture, Slides, online resources	Continuous Assessment, Mid-term Evaluation (Project + Experiment), Quiz, Lab Report, Presentation, Assignment, Final Examination (Project + Experiment)
2	Develop projects that have practical importance	PO 1, PO 2, PO 3, PO5	C6	Lecture, Slides, online resources	Continuous Assessment, Mid-term Evaluation (Project + Experiment), Quiz, Lab Report, Presentation, Assignment, Final Examination

					(Project + Experiment)

*Technology required for the transition from Sonal Bangla to Digital Bangladesh and Smart Bangladesh

5. Mapping of Knowledge Profile, Complex Engineering Problem Solving and Complex Engineering Activities

COs	K1	K2	K3	K4	K5	K6	K7	K8	P1	P2	P3	P4	P5	P6	P7	A1	A2	A3	A4	A5
1					✓		✓	✓								✓		✓		
2							✓							✓			✓			

6. Lecture Plan

Week	Experiment Name	Course Outcome
1	LCD character display with Arduino	CO1
2	Sonar Sensor interfacing with arduino and display the output to LCD **Project Assignment with proposal**	CO1, CO2
3	Gas/Smoke Sensor interfacing it with Arduino	CO1, CO2
4	Temperature and humidity measurement with the am2301 humidity sensor (DHT21/ DHT22) and display it on the LCD monitor	CO1, CO2
5	Interfacing PIR motion sensor with Arduino	CO1, CO2
6	MID Term Evaluation based on LAB experiments	----
7	MID Term Evaluation based on Project Progress	----
8	Control three different LEDs based on the range of the flame	CO1, CO2
9	Monitor the Heart Rate using Heartbeat Sensor and Arduino	CO1, CO2
10	Interfacing soil moisture sensor and rain sensor with arduino	CO1, CO2
11	Level Measurement using proximity sensor	CO1, CO2
12	DC motor speed control using PWM	CO1, CO2
13	Final Evaluation based on LAB experiments	----
14	Final Evaluation based on completed Project	----

7. Assessment Strategy
- Class Attendance: Class attendance will be recorded in every class.
- Continuous Assessment: Continuous assessment of any of the activities such as class participation, quizzes, assignment, presentation, etc. The scheme of the continuous assessment for the course will be declared on the first day of classes.
- Mid-term Examination: A comprehensive mid-term evaluation will be held.
- Final Examination: A comprehensive final examination will be held in the last week of the term.

8. Distribution of Marks

- Class Attendance   10%
- Continuous Assessment   30%
- Mid-term Evaluation (Project + Experiment)   24%
- Final Examination (Project + Experiment)   36%
- Total   100%

9. Textbook No textbook is required. Handouts are adopted from the following books and will be posted on the Web
- Micromachined Transducers Sourcebook 1st Edition by Gregory T. Kovacs

10. Reference Book None N/A