

## CSE 316 SESSIONAL Guidelines

1. Attendance: Marks will be awarded according to BUET rule.
2. Experiments:
  - Experiments are to be finished within the class hour. **NO PROVISION FOR REPEAT.** Evaluation will be based on whatever is done during the class. However if one wants to improve one's grade, (s)he can do it by performing the experiment in any subsequent class. In that case one will be entitled to get a maximum of 70% marks.
  - The weight of each experiment will be the same. For simplicity of evaluation each experiment will be marked in 10. **For extraordinary performance such as exploring different alternatives or producing different outputs not mentioned in the sheet will be awarded with additional 20% bonus.**
  - Two types of performance will be evaluated: **individual and group.**
  - Individual performance will be evaluated based on his response to the questions asked to each member of the group during class. This mark will vary from individual to individual.
  - Group performance will be based on what they are doing to perform the experiment. This mark will be same for all the members present in the class. **HOWEVER, IF ANY MEMBER IS FOUND NOT PARTICIPATING ACTIVELY IN THE EXPERIMENTS, HIS/HER GROUP MARKS WILL BE DEDUCTED (NO FREE MARKS FOR ONLY SHOWING UP AND GOSSIPING/DOING NOTHING).** If anyone remains absent in a class, his group mark will be zero.
3. Quiz: One Quiz will be held at the end of the term.
4. Project: Students in small groups [1 or 2 members] will have to complete [design and implement] a project using ATmega32 microcontroller.
5. Viva: One viva will be held during 7<sup>th</sup> week.
6. Lab Test: One lab test will be held also in 4th week

**Marks Distribution:**

Criteria	Marks(%)
Attendance	10
Experiment <ul style="list-style-type: none"><li>• Group Marks - 10</li><li>• Individual - 10</li></ul>	20
Viva	10
Lab Test	10
Project	25
Final Quiz	25
<b>Total</b>	<b>100</b>

**Week Plan:**

Week	Topics
Week 1	Introductory Class
Week 2	Interfacing 8255 PPI with 8086 microprocessor
Week 3	Interfacing 8255 PPI with 8086 microprocessor
Week 4	Lab Test
Week 5	Experiment on ATmega32 Microcontroller
Week 6	Experiment on ATmega32 Microcontroller
Week 7	Experiment on ATmega32 Microcontroller
Week 8	VIVA
Week 9	Project on microcontroller
Week 10	Project on microcontroller
Week 11	Project on microcontroller
Week 12	Quiz

## **Learning Outcomes/Objectives:**

After undergoing this course, students should be able to:

- i. Integrate microprocessors with interfacing chips.
- ii. Create simple digital systems with microcontroller and various sensor and actuators.

## **Code Study Guidelines:**

The followings are the most relevant codes:

FND.c: 7-segment display

LED.c: LED

speak\_1.c: Keypad Input

MATRIX.C, MATRIX\_1.C, MATRIX\_2.C, MATRIX\_3.C, MATRIX\_4.C : LED Matrix

LCD.c: LCD display

SPEAK.C, speak1.c: Speaker

From the codes and user manual, you will have to understand the basic working principles of LED, 7-segment display, keypad, LED matrix, speaker and LCD module.

For Example in case of LED Matrix:

PORTC is connected to columns: Active High, LSB corresponds to Leftmost Column

PORTA corresponds to Green LEDs: Active Low, LSB corresponds to BottomMost Row

PORTB corresponds to Red LEDs: Active Low, LSB corresponds to BottomMost Row