# CSE345 Digital Logic Design

Course Outcome: CO4

Program Outcome: PO3

Cognitive Level: C3

Psychomotor Level: P2, P3

Affective Level: A2

Knowledge Profile: K4, K5

Complex Engineering Problem: EP1, EP2

# Project-1

## 3-Input Majority Detector

Design and implement a combinational circuit that detects the majority value (1s or 0s) among three binary inputs. The circuit outputs LOGIC HIGH (1) only when two or more inputs are 1- indicating a majority of 1s.

# Project-2

## 3-Bit Binary to Gray Code Converter

Design and implement a 3-bit binary to Gray code converter using logic gates. The circuit converts standard binary numbers to Gray code, where only one bit changes at each transition.

## Marks Distribution

| Assessment Area | Mark |
|---|---|
| **C3: Cognitive: Applying** | 7 |
| **P2: Psychomotor: Manipulation** | 1 |
| **P3: Psychomotor: Precision** | 1 |
| **A2: Affective: Responding** | 1 |
| **Total** | **10** |

**Project Report** will include

1. Problem Statement
2. Design Details
3. Circuit Diagram
4. Behavioral Verilog Code (Procedural Model and Continuous assign Statement) and Simulation Result (Screenshots)

**Note:** Odd digit will undertake Project-1 and Even digit will undertake Project-2.