## **CSE 208 (Data Structures and Algorithms II Sessional)**

## **Offline Assignment 2**

Submission deadline: Week 4

You are going to implement the Bellman-Ford algorithm (a single source shortest path algorithm in graphs) for the second offline assignment of this semester. Please consider the following requirements.

- 1. The time complexity of your implementation should be O(|V|.|E|), where V and E are respectively the sets of vertices and edges of the input graph.
- 2. Your algorithm should be able to handle edges with negative weight.
- 3. Your algorithm should be able to detect the existence of negative cycles in the input graph.
- 4. You can't use standard template library in your implementation.
- 5. Make sure your code is well-organized so you can use it for solving other problems.
- 6. Use file operations for input and output.