

## CS152: Data Structure

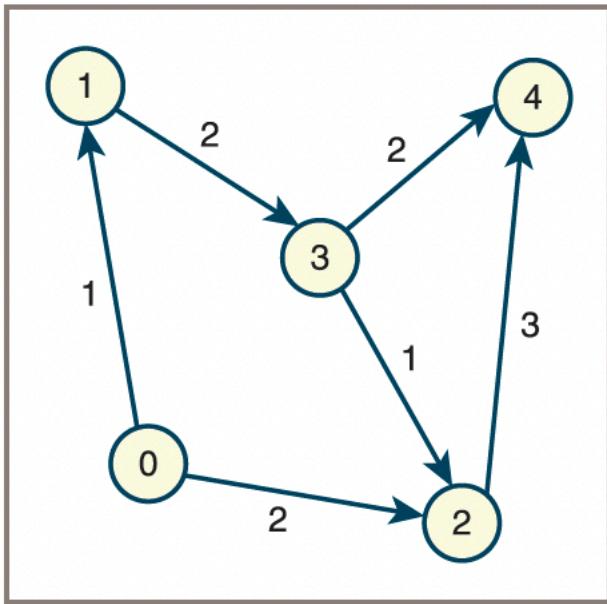
### Week 13 - Graphs Worksheet (A)

**Write the full name of all collaborators inside this box**

**Discuss these questions and write your answers in the space provided below it.**

1. The course prerequisites for a computer science major at a local college are numbered as follows: 111 is required for 112 and 210; 112 is required for 312, 313, 209, and 211; and 210 is required for 312. Draw a directed graph that represents this numbering structure.
  
2. a) How many edges are in a **complete, undirected** graph with six vertices?
  
2. b) Draw a graph that represents the description in 2a above.

3. Make a table showing the **adjacency matrix** for the following directed graph with edge costs.



4. Draw a picture showing the **adjacency list** for the above-directed graph with edge costs. You should assume that the edges in a list are ordered from least cost to greatest cost.
5. State one advantage and one disadvantage of the adjacency matrix representation and the adjacency list representation of graphs.