

**ECE G205 Fundamentals of Computer Engineering**  
**Fall 2004**

**Homework 6: Due by Wednesday November 17 2004**

- This test contains 2 problems. They allow you to earn 100 points.
- Show your work, as partial credit can be given. You will be graded not only on the correctness of your answer, but also on the clarity with which you express it. **Be neat.**
- **No late submissions will be accepted.**
- Only homework returned in a 9in × 12in envelope will be accepted. (If you cannot find such envelope, ask the Instructor.) Please, write your name and the class name (ECE G205) on the envelope (write clearly, please).
- For the two problems below NO code has to be sent to the TAs.

Write your name here: \_\_\_\_\_

- **Problem # 1 [50 points].** Modify the Floyd-Warshal algorithm so that it returns `true` if and only if the input graph  $G$  contains negative cycles, `false` otherwise.

- **Problem # 2 [50 points].** Write an algorithm whose input is the predecessor array  $\pi$  constructed by the Dijkstra algorithm and whose output is a list of shortest paths from the source vertex to all of the other vertices in the graph.