Reminder

Final Exam will be held at 2:00 pm on Friday, May 11, in ECSS 2.410. There will be a review class on Wed. May 2, which will be the last class of this semester.

Homework Assignment #7 (Due Date: May 2)

Do the following problems:

(1) For the graph shown in Fig. 1, perform depth-first search starting from vertex a, identify forward edges, back edges and cross edges, and find strongly connected components.

![Figure 1](image1.png)

(2) Prove that a directed graph of n vertices is strongly connected with minimum number of edges if and only if it is a ring. A ring of 5 vertices is shown in Fig. 2.

![Figure 2](image2.png)
(3) A student needs to take a certain number of courses to graduate, and these courses have prerequisites that must be followed. Assume that all courses are offered every semester and that the student can take an unlimited number of courses each semester. Describe an algorithm which for a given list of courses and their prerequisites, computes a schedule that requires the minimum number of semesters.