ECE 481

PRACTICE PROBLEM 8.3.2k JG 8/00

The purpose of this assignment is to estimate the time to complete implementation of your project in ECE 4820 ECE [Senior] Design II for several different scenarios using a Critical Path Network (CPN). ECE 4810 activities SHOULD NOT be included in your CPN.

As a team:

1. Write a 1 or 2 page description of your project. Include a block diagram of your project with the description and use it as a focus for your description.

2. Based on the above description, determine and submit a Critical Path Network (CPN) for your project in the form of a work flow diagram (i.e., circles and arrows, see Middendorf, Chapter 8).
-Use days as your unit of time and indicate calendar dates on the CPN.
-Be sure to show the Earliest Event Time and the Latest Event Time for each event.
-Determine and show the Independent Float for each activity.
-Include notes of explanation where appropriate and always show sample calculations.
-Include the activities and events related to preparing your final project report in the CPN. Note that a CPN for a senior design project is expected to have well over 2 dozen activities. Fewer than 24 could be an indication of a superficial planning process.

3. Determine an expected duration and the standard deviation (assuming a beta distribution) of each activity in your CPN. Present this information in the form of a table with at least 5 columns, the column headings being: Activity Name & Number; Expected Duration; Standard Deviation; Name(s) of team member(s) responsible for the activity; Notes or Comments. Show the Expected Durations and Standard Deviations on your CPN. Include a key for identifying information on the CPN.

4. Indicate the critical path on your project's CPN and calculate the project's critical time for completion.

5. The target date for having your project and the final draft of your project report completed is three weeks before the end of classes in the semester in which you plan to take ECE 482. Using Program Evaluation and Review Techniques, determine the probability of completing your project:

a. 1 week ahead of schedule, 3 weeks behind schedule (i.e. by the last day of classes) and **finally**,
b. of completing it on time.

As always be sure to show your work!

6. Give a one or two page summary of what you learned and the conclusions you drew from your CPN and the PERT analysis.

Reference

W. H. Middendorf and R. H. Engelmann Design of Devices and Systems, Marcel Dekker, 3rd ed., 1998.

