Prince of Songkla University

The Faculty of Engineering

Midterm Examination Semester II   **Academic Year: 2005**

Date: Dec 12, 05   **Time: 13:30 -16:30**

Subject: 226-502 Production design & Mgt.   **Room: R200**

ทุจริตในการสอบ โทษขั้นต่ำคือ ปรับตกในรายวิชานั้น และพักการเรียน **1** ภาคการศึกษา

DIRECTIONS
1. All notes or materials, dictionary and calculator are allowed.
2. Questions are given on 2 parts.
   (part 1 has 3 pages, part 2 has 5 pages)
3. Total score is 100. (50 from part 1, 50 from part 2)
4. Your answers could be in English or Thai.
5. Please check all questions before start working.

Good Luck
Asst.Prof.Dr. Angoon Sungkhapong
Dr. Klangduen Pochana

Part 1 (Dr. Angoon Sungkhapong) (50 points)

Answer these following questions in the answer book. (Total score is 50 points)

1. Identify the three major functional areas of business organizations and briefly describe how they interrelate.   (10 points)

2. Dundas Bike Components Inc. manufactures bicycle wheels in two different sizes for the Big Bike Co. assembly plant located across town. David Dundas, the firm's owner-manager, has just received Big Bike's order for the next six months.

	20-inch wheels	24-inch wheels
Nov.	1,000 units	500 units
Dec.	900	500
Jan.	500	300
Feb.	700	500
Mar.	1,100	400
Apr.	1,100	600

Currently David employs 30 full-time, highly skilled employees, each of whom can produce 50 wheels per month. Because skilled labor is in short supply in that area, David would like to develop a pure level output plan. There is no inventory of finished wheels on hand at present, but David would like to have 300 on hand at the end of April. Big Bike will tolerate backorders of up to 200 units per month. Calculate the total annual cost of your plan using these costs:

Regular	$200	Hiring	$300
Overtime	$7.50	Layoff	$400
Part-time	NA	Inventory	$1.00
Subcontract	NA	Backorder	$6.00

                                             (20 points)

3. On May 1 or 5/01, a lazy MfE student suddenly realizes that he has done nothing on seven different homework assignments and projects that are due in various courses. He estimates the time required to complete each project (in days) and also notes their due dates

Project	1	2	3	4	5	6	7
Time(days)	4	8	10	4	3	7	14
Due date	4/20	5/17	5/28	5/28	5/12	5/7	5/15

Because projects 1, 3, 5 are from the same class, he decides to do those in the sequence that they are due. Furthermore, project 7 requires results from projects 2 and 3 are completed. Determine the sequence in which he should do the projects in order to minimize the maximum lateness. (20 points)

Part 2 (Dr. Klangduen Pochana) (50 points)

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Answer these following questions in this answer sheet. Do not use a separated answer book. (Total score is 50 points)

1) Assume that you are an employee of Tesco Lotus supermarket. You are promoted to be a member of productivity improvement team. This team aims to enhance productivity of services provided in the supermarket.
   a) How should you start productivity improvement project?
   b) Recommend **three** productivity tools that can be used effectively for this supermarket? Give reason.
   c) With the tools that you recommend in Question#2, please explain **how to** implement it effectively. Your tools can be implemented in some parts of the supermarket or to the whole supermarket. You need to identify where or what type of work that you intend to use your tools to increase the productivity.
   d) How can you measure the result or effect of your improvement projects?
(30 points)

Name :..Code:...

2) Answer these following questions: (20 points)

2.1) How does "effectiveness" differ from "efficiency"? (3 points)

2.2) Suggest five points (or activities) in the IE department that we can use "Pokayoke" to improve, and explain how to improve them. (5 points)

2.3) Draw a flow diagram of counter service in Thai commercial bank in PSU. Start from open the door until walk out of the door. (6 points)
If you've not been there, you can draw any bank you know.

Part 2- 4

Good Luck.
Dr. Klangduen Pochana

2.4) How do you apply "continual improvement process" to improve your study? (6 points)

Good Luck.
Dr. Klangduen Pochana