



Manage Productivity to Maximize Profit

An Online Continuing Education Course for Engineers

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Manage Productivity to Maximize Profit

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COURSE OVERVIEW

This course is for people wanting a basic understanding of the design and management of efficient work processes in any environment for any product. Public organizations will benefit as much as private because work efficiency and productivity are essential to both. The concepts presented here are universal whether processing legal documents or building toasters on an assembly line.

Plenty of practice exercises (with answers following) give students the opportunity to understand the concepts of production planning, equilibrium, and efficiency and apply them in their own work. Students will be able to measure existing production capacity and forecast future demand while analyzing data to determine breakeven points for equipment purchase or leasing and creating optimal staffing strategies with full or part-time help.

Profitability (efficiency in the public-sector arena) only comes when we make the most efficient and effective use of our existing resources and available data.

Please note: We will do a few forecasting examples later in the course using simple math applications that you may not have used since junior high math. Please do not think we are trying to teach an engineer basic math – only reminding you of applications you may not have used in a long time!

LEARNING OUTCOMES

Participants in this self-study course will learn to:

1. List the elements needed for effective goals
2. Identify measurable work performance goals
3. Analyze floor plans for optimal workflow
4. Analyze workflows to determine their current efficiency
5. Explain and apply the principles of 'production equilibrium'
6. Determine work process flow adequacy
7. Revise workflows to improve efficiency
8. Explain the concept of 'cycle time'
9. Create optimal production cycle timing
10. Analyze workflows looking for improved efficiency and productivity
11. Analyze expected workflows to determine equipment and staffing needs
12. Learn to calculate the existing costs and production capacity of an existing workforce
13. Apply the skills learned to practice exercises within the course
14. Analyze historical data with a variety of statistical tools
15. Forecast our ability to meet future business opportunities
16. Analyze existing staffing and production needs to devise the most economical mix of full and part-time employees
17. Determine production equilibrium across workstations in a production flow to maximize production while minimizing costs
18. Determine how efficiently employees are working
19. Discover if they are being "productive" or "busy"
20. Predict future demand and capacity with more confidence using historical data
21. Conduct break-even analyses to select the best use of resources
22. Use historical data effectively to support financial proposals
23. Use weighted data effectively to forecast future trends
24. Quickly prioritize a list of group options for decision making

PRODUCTIVE OR BUSY?

Do you think a person can be very busy but not very productive? How could this happen?

It is because task requirements are not always well defined. Sometimes people are just “busy” because they were not told all three elements of productivity. But, when you focus a task with the three critical performance standards of productivity, they will include “how much” (**quantity**), “how well” (**quality**) and “by when” (**time**), you establish goals and they become productive.



The light bulb in a lamp is physically the same as a laser beam.



However, the laser has all its energy narrowly focused upon a point that gives it incredible power. How could you compare parts of your workday to the light bulb and the laser beam?

When do you feel more satisfied with your work: *when you are acting like a light bulb or a laser beam?*

Which condition(s) ultimately makes your job more enjoyable and your work more productive?

How can you use the light bulb and laser beam example in a discussion with your employees?

Why would you want to do that?

PRACTICE EXERCISE #1

Are these situations productive or busy?

Read each situation and put a checkmark under the appropriate “Productive” or “Busy” column.

Remember, we define “productive” as having all three elements of **how much (quantity)**, **how well (quality)**, and **by when (time)** present in a situation. (Answers are given below.)

| The Situation | Productive | Busy | If “busy,” what is missing? |
|--|------------|------|-----------------------------|
| Grant has been pushing the cart loaded with statements up and down the hall for the past 45 minutes. | | | |
| Logan has processed 200 documents in the past 3 hours. | | | |
| Murphy has the machine running items at a speed of 375/hour and a reject rate of .82% | | | |
| Cindy completed 3 hours of classes at night school this past quarter. | | | |
| Describe a typical activity of yours that is busy but not productive because you have not been told the three components of productivity; quality, quantity, and time . | | | |
| Which of the three components is missing? | | | |
| What will you do about it? | | | |

- ✓ Grant is just busy. Nothing has been accomplished. What is the QUALITY measurement?
- ✓ Logan is busy. She has processed 200 documents but are they the correct ones? Where they processed accurately? There is no QUALITY component.
- ✓ Murphy has been productive. The QUALITY component is the “reject rate.”
- ✓ Cindy has been busy. She completed the courses but what was her grade: i.e., the QUALITY of her participation? If she failed, she was technically productive. But if the quality is below acceptable, it is a waste of resources or negative productivity. If she received an “A”, she would be more productive than if she received a “C”.

THE VALUE OF SETTING MEASURABLE GOALS

There are at least four reasons why you should set *measurable* goals:

1) Knowing where you are going will help you plan to get there.

How do you plan your vacations?

- a) Start planning with the ultimate destination and work backward budgeting time and money necessary to make it happen (Time and money are measurable)
- b) Just leave the house on the first of the month

2) Measurable progress

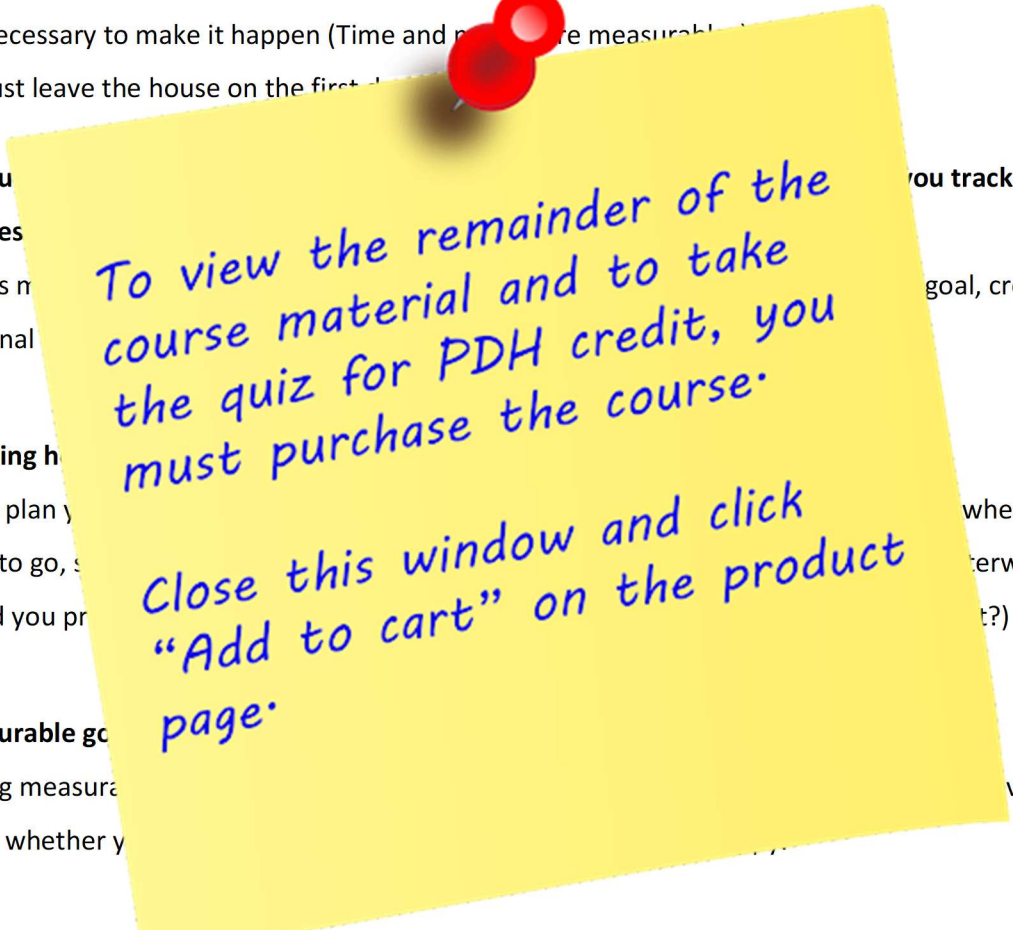
Just as no personal

3) Planning how

If you plan where you want to go, you would you prefer

4) Measurable goals

Having measurable goals helps you guess whether you



To view the remainder of the course material and to take the quiz for PDH credit, you must purchase the course.

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How does this lack of clarification affect you and your work?

(It probably undermines your confidence and keeps you from going "all out" because you fear you may have to undo some work.)