University of Arkansas - Fort Smith
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General Syllabus

PRFS 4703 Production Planning and Scheduling

Credit Hours: 3 Lecture Hours: 3 Laboratory Hours: 0

Prerequisites: PRFS 4133 Project Management and senior standing or consent of department head

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Introduction to basic techniques of scheduling, manufacturing planning and control, just-in-time systems, capacity management, master production scheduling, single machine processing, scheduling heuristics and intelligent scheduling systems.

B. Additional Information - None

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Identify/define "production," "productivity," and "operations management."
2. Identify the three functional areas of organizations and how they interrelate.
3. Understand specific approaches used by operations management to achieve strategic goals and foster competitive advantage.
4. Discuss the importance of product and service design, with particular emphasis paid to the concept of standardization.
5. Apply various methods of forecasting.
6. Explain the importance of process selection and capacity planning.
7. Identify state-of-the-art technology used in operations.
8. Understand and apply various strategies for the design of work systems.
9. Make time estimates based on learning curves.

10. Understand the importance of the transportation model to production planning.
11. Apply the principles of supply and inventory management.
12. Understand and develop aggregate scheduling plans.
13. Understand/explain how requirements in a master production schedule are translated into material requirements for lower-level items.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills - The student will identify a problem, isolate its components, organize information for decision making, establish criteria for evaluation, and draw appropriate conclusions through participation in problem solving and troubleshooting activities. In addition, the student will synthesize ideas and materials to reach creative solutions to posed problems.

Quantitative Reasoning: The student will demonstrate the use of quantitative reasoning via the application of mathematical operations to production and scheduling problems.

Communication Skills (written and oral)

Students will communicate proficiently. Students will express ideas and concepts through descriptive writing assignments and flow-charting of manufacturing processes. Additionally, students will deliver formal and informal presentations.

Ethical Decision Making

Students will evaluate specific operations management strategies to understand the ethical issues involved and the stakeholders affected.

Global & Cultural Perspectives

Students will reflect upon cultural differences and their implications for interacting with people from cultures other than their own. Through group projects, the student will have the opportunity to work with other students from diverse backgrounds.

III. Major Course Topics

A. Introduction to Production Planning and Operations Management
B. Designing Operations
   1. Forecasting
   2. Design of Goods and Services
   3. Process Strategy and Capacity Planning
   4. Location/Layout Strategies
C. Managing Operations
   1. Supply Chain Inventory management
   2. Aggregate Scheduling

3. Materials Requirements Planning

D. Quantitative Models
   1. Decision-Making Tools
   2. Waiting Line Models
   3. Transportation models
   4. Learning Curves