

Industrial Engineering Program

1. COURSE NUMBER AND NAME	IE 459 – Production Planning and Control
2. CREDITS AND CONTACT HOURS	3 Credits. 3 Contact Hours
3. COURSE INSTRUCTOR	
4. TEXT BOOK	Askin G. and Goldberg, J. B., Design and Analysis of Lean Production Systems, John Wiley & sons, 2002.
4A. OTHER MATERIAL	
5A. CATALOG DESCRIPTION	A study of the components and functioning of integrated production, planning, and control systems. Forecasting, aggregate planning, scheduling, and recent models of production and inventory control for optimizing continuous and intermittent manufacturing operations. MRP basics. Introduction to using a computer to apply scheduling models.
5B. PREREQUISITES	IE 439, junior or senior standing.
5C. REQUIRED, ELECTIVE OR SELECTED ELECTIVE	Required
6A. SPECIFIC OUTCOMES OF INSTRUCTION	The students will: <ol style="list-style-type: none"> 1 Be able to choose linear programming, stochastic or queueing models to solve production problems (a and e). 2 Be able to carry out planning and scheduling activities (a, k). 3 Be able to identify and explain issues and practices associated with modern supply chains (j).
6B. CRITERION 3 OUTCOMES ADDRESSED	The mapping of the six (6) outcomes of instruction of item 6A to the Criterion 3 outcomes (a-k) is as follows: <ol style="list-style-type: none"> 1. Satisfies Criterion 3 outcomes a and e. 2. Satisfies Criterion 3 outcomes a and k. 3. Satisfies Criterion 3 outcome j.
7. TOPICS COVERED	<ol style="list-style-type: none"> 1. Introduction to Production Planning and Control (PP&C) 2. Functional modules in the control of a manufacturing organization 3. Typical PP&C decisions, objectives and constraints 4. Forecasting methods 5. Aggregate planning and master scheduling 6. Linear programming based methods, capacity requirements planning 7. Inventory analysis and control, analysis of various EOQ models 8. Models under certainty and uncertainty 9. Machine scheduling, job sequencing and line balancing

	<ul style="list-style-type: none">10. Job shop and flow shop models11. Material requirements planning12. Lot size methods13. Just-in-time production control
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