ISEN 6906 - Supply Chain Engineering

Fall 2026 Syllabus, Section 01, CRN 44202,

Credit hours: 3

Instructor

Seok Gi Lee

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Public Instructor Information

Instructor Title: Assistant Professor
Instructor Professional Qualifications: PhD, Industrial and Manufacturing Engineering, Pennsylvania State University, 2013
Instructor Office Location: Moser 2465
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Course Description

6906. Supply Chain Engineering. In an expanding global economy, efficient and responsive supply chains are critical to business success. This course explores key aspects of supply chain engineering with an emphasis on mathematical approaches to supply chain analysis. Topics include demand forecasting, inventory modeling and control, facility location, capacity planning, transportation, warehousing, scheduling, material requirements planning and procurement. Prereq.: ISEN 3710/ISEN 6921 and consent of instructor. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	Production and Operations Analytics	Steven Nahmias, Tava Lennon Olsen	1478639261
Optional	Service Systems Engineering and Management	by A. Ravi Ravindran, Paul M. Griffin, Vittaldas V. Prabhu	1498723063

All course content will be summarized in PowerPoint slides and uploaded to Blackboard.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Course schedule (subject to change depending on the progress of the lecture)edule

Week of	Proposed Topic	Due/To Prepare for Class
8/24	Supply chain decisions and design metrics Supply chain efficiency	
8/31	Supply chain network design and distribution	
9/7	Location-distribution problem Supply chain network design	
9/14	Outsourcing decisions and supplier selection	
9/21	Scaling criterial values	
9/28	Inventory control subject to known demand	
10/5	Adding finite lead time Economic production quantity	
10/12	Alternatives when demand cannot be met Quantity discount models	
10/19	Constraints in inventory control Inventory control subject to unknown demand	
10/26	Stochastic demand – discrete demand with shortage (q, r) policy	

11/2	Service level in (q, r) policy
11/9	Role of demand forecasting Forecasting with random demand
11/16	Simple linear trend model
11/23	Seasonality in forecasting Thanksgiving holiday
11/30	Forecasting errors Incorporating seasonality and trend in forecasting

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.