Stochastic Manufacturing and Service Systems

Last Updated: Wed, 01/21/2026

Course prefix: IE

Course number: 3232

Section: M09

CRN (you may add up to five):
498516

Instructor First Name: Craig

Instructor Last Name: Tovey

Semester: Spring

Academic year: 2026

Course description:

Methods for describing stochastic movements of material in manufacturing facilities, supply chain, and equipment maintenance networks. Includes analysis of congestion, delays, and inventory ordering policies.

Course learning outcomes:

1. Describe the role of uncertainty in manufacturing and service systems
2. Analyze and manage uncertainty in systems dealing with perishable items
3. Quantify the waiting time, length of the queue, and utilization in queueing systems
4. Analyze and manage uncertainty in systems using predictions of potential future outcomes
5. Effectively work as a member of a team to analyze the role of uncertainty in a system and communicate the findings

Required course materials:

The Goal: A Process of Ongoing Improvement (Second Revised Edition) by E. M. Goldratt and J. Cox, North River Press.

Grading policy:

Biweekly quizzes based on homework, two tests, final exam, written reports on data or software, attendance.

Attendance policy:

Attendance is required unless 24-hour advance notice is given.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.