

Syllabus: IE 361 Production Planning and Control

Instructor: Qiong Wang (qwang04@illinois.edu)

Office hour: Monday, 3:00-4:00pm or by appointment, TB 201B

TA: Reza Yousefi Maragheh (ysfmrgh2@illinois.edu)

Office hour: Thursday 12:30-1:30pm, TB 416

TA: Rachneet Kaur (rk4@illinois.edu)

Office hour: Friday 10:00-11:00am, TB 205

Lecture: Jan 14 - May 1, MW, 1:00-1:50pm, 2310 Everitt Laboratory

Labs: AB1: Friday, 1:00 - 1:50pm, TB 316
AB2: Friday, 2:00 - 2:50pm, TB 316
AB3: Friday, 3:00 - 3:50pm, TB 316
AB4: Friday, noon-12:50pm, TB 316

No Lab on Friday, Jan 18

Prerequisite: IE300, (IE310 helps).

Class Material

- recommended books: L. V. Snyder and Z.-J. M. Shen (2011), “Fundamentals of Supply Chain Theory,” John Wiley.
- slides will be posted on COMPASS

Grade

- In-class exam 1: 20%.
- In-class exam 2: 20%.
- Final exam: 45%.
- Homework: 15%.

Homework

- assignments will be posted on COMPASS with due date marked (usually on Wednesday next week before the lecture).
- you can submit homework electronically (preferred) or in paper.

- late homework will get 10% point reduction and will not be accepted after its solution has been posted on Compass.
- you can work with TAs and discuss with your classmates during the lab sessions about your homework.
- **No Plagiarism:** zero point for homeworks that copy from each other. Those who submit copied homework twice receive ZERO homework grade for the entire course.

Course Objective

- explore the field of supply chain management in general.
- develop basic understanding of issues in operations management.
- learn to use quantitative techniques and tools to manage supply chains.

Course Schedule (tentative)

- **Introduction:** Jan 14
- **Section 1: Inventory Systems** (Jan 16 - Feb 5)

Jan 16, 23	overview, Economic Order Quantities
Jan 28	Newsvendor model and its applications
Jan 30, Feb 4, 6	inventory control in single-item systems.
Feb 11	review
Feb 13	In-class exam 1
- **Section 2: Supply Chain Strategy** (Feb 18 - Mar 13)

Feb 18	order coordination
Feb 20	component commonality
Feb 25	production planning
Feb 27	cross-functional team
Mar 4	contracting
Mar 6	procurement auction
Mar 11	review
Mar 13	in-class exam 2
- **Section 3: Demand Forecasting and Learning** (Mar 25-Apr 3)

Mar 25, 27	overview, and basic methods
Apr 1, 3	time series and other forecasting topics

- **Section 4: Scheduling and Sequencing** (Apr 8- Apr 15)
 - Apr 8 single-machine scheduling, concept and algorithms
 - Apr 10 extensions: scheduling with deadline; parallel systems
 - Apr 15 scheudling: serial systems

- **Section 5: Project Management** (Apr 17 - Apr 22)
 - Apr 17 project representation and critical path determination
 - Apr 22 minimum cost project management with expediting

- **Conclusion** (Apr 24 - May 1)
 - Apr 24, 29 discussions and course summary, practice problems will be posted.
 - May 1 Q & A on practice problems

 - Final Exam date and location TBD