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

• 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 scheduling: 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