SIE 462/562: Production System Analysis
Spring 2022

Time: M/W/F 12:00PM - 12:50PM
Instructor: Anne McBride, annemcbride@email.arizona.edu
Engineering Bldg., office ENGR 267
Instructor Office Hour: By appointment (usually available after class - Mon and Wed 1:00-2:30 pm)
Teaching Assistant (TA): Nazmul Hasan, nh202@email.arizona.edu
TA Office Hours: Tue and Thu 1:00-2:00 pm, or by appointment

Course Mode: Please note this course will be offered in the form of "flipped classroom". Students will learn by watching lecture videos before coming to classes. During class, an instructor will lead in-class activities such as discussions, projects, tutorial sessions, etc. To make sure students have watched the lecture videos before classes, a short Reading Check will be conducted at the beginning of 1st class in a week.

Course Description: Production systems, quantitative methods for forecasting, aggregate planning, inventory control, material requirement planning, production scheduling, manpower planning and facility design.

Prerequisites: SIE 305 and SIE 340 or consent of advisor.

Textbook:
Production and Operations Analysis (6th / 7th Ed), McGraw-Hill, Steven Nahmias

Course Website:
D2L will be extensively used for this course. All course materials (lecture slides, video lectures, homework assignments, etc.), grades and other pertinent course information will be posted on the course's D2L website from http://d2l.arizona.edu. Students must regularly visit the D2L site.

Assessment:

Assessment	Percentage
Midterm Exam	20%
Final Exam	30%
Homework	15%
Project*	25%
Reading Check	10%

* Projects are different for 462 and 562 students. Refer to separate documents for project details.

Tentative date for Midterm Exam: Mar 2nd (Wed) during regular class time

Grading:
The total score is 100. The lowest score to pass the course is 60/100. Final grades will be curved at the instructor's discretion. SIE 462 and SIE 562 will be graded separately.

Attendance Policy:
Attendance is required. Some in-class materials may not be available on slides / textbook but included in exams. Students are responsible for the materials covered if missing a class. Make-ups for Reading Checks (an in-class activity) will not be available.

Homework Policy:
HW will be assigned throughout the semester, usually following the completion of course chapters. All HWs should be submitted **on D2L by 11:59 PM on the due date**. Except for medical reason (doctor's proof needed), penalty for late submission is:
1) Submission on the 1st day after due date: 15%
2) Submission on the 2nd day after due date: 30%
3) Submission on the 3rd day or later: 100%

Project Policy:
SIE462 has a team-based project; SIE562 has an individual project. Members in the same team will receive the same project score. For project details, refer to the separate **Project Description** document. The penalty for late submission is the same as Homework.

Course Outline:

Introduction; Strategy and Competition
Forecasting
Aggregate Planning
Inventory Control Subject to Known Demand
Inventory Control Subject to Uncertain Demand
Supply Chain Management
Push and Pull Production Control Systems: MRP and JIT
Operations Scheduling
Facilities Layout and Location

Course Learning Outcomes: Students should be able to

- formulate a problem in technical terms including the relevant aspects from the mathematical, natural, and SIE engineering sciences;
- determine and implement the appropriate modeling approach for problem solution;
- understand all components of manufacturing and service operations and their connection through supply chain;
- model and analyze systems having conflicting criteria and interacting decision variables;
- understand the impact of the solution on society and environment.

Code of Academic Integrity:
Graded work must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity.
There is zero tolerance towards plagiarism and any act of intellectual dishonesty.

Subject to Change Statement:
Information contained in the course syllabus, except the grading policy, may be subject to change.