

## ISyE 3232

### Stochastic Manufacturing & Service Systems

**Instructor:** Hayriye Ayhan (hayhan@isye.gatech.edu); Office: Room 329, Groseclose Building.

**Class Time and Place:** 12:30 to 2:20 in Mason 3133. We will take a 5 minute break around 1:30 unless we have an exam

**Instructor's Office Hours:** Tuesdays and Thursdays from 2:30 to 3:30

**Class Website:** Homework assignments and solutions, information on Littlefield Technologies, old exams and other announcements will be posted on T-square.

**Brief Course Description:** Manufacturing & service systems typically have random components to their behavior such as the demand for products and services. We will learn quantitative methods which are useful in analyzing, designing, and operating stochastic systems particularly manufacturing and service systems. Much of our attention will be focused on understanding, managing and reducing variability for inventory, production and service systems.

**Textbook:** is optional. You can use *Applied Probability and Stochastic Processes* by Richard Feldman and Ciriaco Valdez-Flores or *Modeling, Analysis, Design, and Control of Stochastic Systems* by V.G. Kulkarni as reference books.

**Required Course Packets:** You should obtain and read a copy of *The Goal: A Process of Ongoing Improvement (Second Revised Edition)* by E. M. Goldratt and J. Cox, North River Press, 1992. The ideas in this book should be useful when you and the other members of your team are managing a factory for Littlefield Technologies. There will be a homework assignment related to this book.

You should buy a course packet from the bookstore to allow you to play the Littlefield Technologies games. The packet contains your individual Littlefield access code. More information about Littlefield Technologies will be posted on the class website.

**Grading:** The grading will be based on two tests (30% each), a final (30%), and homework and projects(10%).

**Tests:** Two tests will be given during the semester. The first test is scheduled for Thursday, June 8. The second test is scheduled for Tuesday, July 11. During tests, you will not be allowed to use books, notes, or calculators. If you cannot take a test at the specified time, please make prior arrangement with your instructor. No makeup exams will be given but the percentage of the final exam will be adjusted.

**Assignments:** There will be both individual and group assignments in this course. The first individual assignment is already on T-square. Assignments will be graded by our TA. On most assignments, selected problems will be graded. **Late homeworks will not be accepted since we post the solutions on the day the homeworks are due.**

You may discuss your assignments with your professor, TA, fellow students, and others. However, you are expected to write up your solutions to individual homeworks on your own.

All members of a group are expected to contribute to group assignments. During the semester, students will be asked to evaluate the performance of the other members of their team. **Using the solutions, in any manner, to assignments given in previous semesters to prepare solutions for current assignments is a violation of the student honor code for ISyE 3232.**

**TA's:** We have two TAs Junqi Hu [hujunqi1210@gatech.edu](mailto:hujunqi1210@gatech.edu) and Pornpawee Bumpensanti [pornpawee@gatech.edu](mailto:pornpawee@gatech.edu). They will hold office hours MW 2:00 to 3:30 in Room 224 of the Main Building.

**Handouts:** Most handouts will be distributed by placing them on T-square.

**Littlefield Technologies:** The team assignment will involve how well your team manages a simulated factory, which will be described in “Littlefield Technologies: Overview”.

The Littlefield simulation will begin on Tuesday, the 13th of June at 5:03 p.m. and end on Tuesday, the 20th of June at 5:03 p.m. The report on the first project will be due Thursday, 22nd of June.