Course title and number         ISEN 453 Manufacturing Operations
Term (e.g., Fall 200X)          Fall 2016
Meeting times and location      TBD

Course Description and Prerequisites
Analytical principles of manufacturing systems design, analysis and control; emphasis placed on stochastic analysis; role of variability and impact on cycle time; push versus pull production strategies including Kanban and constant WIP control; probability, queuing theory, Little’s Law, heavy traffic approximations, and queuing networks.
Prerequisite: ISEN 340

Learning Outcomes
At the end of the course, the student should be able to
• develop and solve analytical models of production systems at the operational level

Instructor Information
Name                             TBD
Telephone number                 TBD
Email address                    TBD@tamu.edu
Office hours                     TBD
Office location                  TBD

Textbook and/or Resource Material

Grading Policies
Homework and Quizzes: 20%

Exam 1: 25% (around week 5 of the semester)

Exam 2: 25% (around week 10 of the semester)

Final Exam: 30% during the week of finals

Grades assigned are A for 90%–100%, B for 80%–89.9%, C for 70%–79.9%, D for 60%–69.9% and F for less than 60%.

Attendance and Make-up Policies

Class attendance is not optional. You are expected to attend all class lectures except for university excused absences. Make-up for the exams and quizzes will be offered only in case of a university excused absence. The university rule regarding excused absences can be found at http://student-rules.tamu.edu/rule07.

Course Topics, Calendar of Activities, Major Assignment Dates

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<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
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<tr>
<td>1</td>
<td>Introduction to Factory Models: Definitions, Notation, modeling, performance, deterministic vs. stochastic</td>
<td>Chapter 2</td>
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<td>2</td>
<td>Single Workstation Factory Models: Queueing models</td>
<td>Chapter 3</td>
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<tr>
<td>3</td>
<td>Single Workstation Factory Models: Markov models</td>
<td>Chapter 3</td>
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<td>4</td>
<td>Single Workstation Factory Models: Balance Equations</td>
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<td>5</td>
<td>Single Workstation Factory Models: M/M/1 models, G/G/1 approximations</td>
<td>Chapter 3</td>
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<td>Exam 1, Processing Time Variability: Breakdown and repairs, other variability</td>
<td>Chapter 4</td>
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<td>Single Product Factory Models: Departure process</td>
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<td>8</td>
<td>Single Product Factory Models: serial systems</td>
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<tr>
<td>9</td>
<td>Single Product Factory Models: queueing networks</td>
<td>Chapter 5</td>
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Other Pertinent Course Information

The course will use computational tools to solve larger problems. Handouts for MATLAB will be provided. Students are expected to apply prior knowledge of MATLAB in this course.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Academic Integrity

For additional information please visit: http://aggiehonor.tamu.edu

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: http://student-rules.tamu.edu/; http://student-rules.tamu.edu/aggiecode; and http://student-rules.tamu.edu/rule20. The complete information of university regulations regarding the handling of academic misconducts (including the appeal process) can be found at http://aggiehonor.tamu.edu/.
I, <insert instructor name>, as the rest of the Industrial & Systems Engineering Faculty, uphold the Aggie Honor Code as an axiom of our academic excellence. We consider its sincere observance to be essential for membership in our department and Texas A&M. We extend you the trust conferred to those who faithfully adhere to our honor code. Abuse of this trust is intolerable, thus I will report and assign an extreme penalty to those who do not stand with us in preserving the integrity symbolized by the Aggie Honor Code, "An Aggie does not lie, cheat, or steal or tolerate those who do."

In this course the penalty for any violation of the Aggie Honor Code, as minimal as it may be, is F*. 