Course title and number       ISEN 370 Production Systems Engineering
Term (e.g., Fall 200X)        Fall 2016
Meeting times and location   TBD

Course Description and Prerequisites

Principles, models, and techniques for planning and analysis of production and distribution systems; application of linear, integer, and nonlinear optimization models and solution methods for aggregate planning, supply chain planning, push (MRP) and pull (JIT) material flow management, inventory control under deterministic and stochastic demands, operations scheduling, and production scheduling.

Prerequisites: ISEN 230 and ISEN 320

Learning Outcomes

At the end of the course, students should be able to

- describe different types and levels of decision making in a production system
- model, formulate, solve, analyze problems arising in aggregate production and supply chain planning
- model and analyze fundamental inventory control systems with certain/uncertain demand
- describe and analyze push (MRP) and pull production systems (JIT)
- model and solve basic operations scheduling problems
- model and solve basic project scheduling problems

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. If a test is missed, you must have a written excuse that meets university requirements for an excused absence. With an excused absence, it is still the student's responsibility to find out the homework assignment and be ready for a quiz. The university rule regarding excused absences can be found at http://student-rules.tamu.edu/rule07.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to decision making problems in production systems</td>
<td>Instructor Notes</td>
</tr>
<tr>
<td>2</td>
<td>Aggregate planning using linear and integer programming</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>3</td>
<td>Single/multi-product models with production/inventory/backorder sales workforce/overtime/setup/etc variables</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>4</td>
<td>Supply chain planning using linear and integer programming</td>
<td>Chapter 6 and instructor notes</td>
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<tr>
<td>5</td>
<td>Inventory control subject to known demand: EOQ and its extensions; Exam 1</td>
<td>Chapter 4</td>
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<tr>
<td>Page</td>
<td>Content</td>
<td>Chapter</td>
</tr>
<tr>
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</tr>
<tr>
<td>6</td>
<td>Discount models; Resource-constrained models</td>
<td>4</td>
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<tr>
<td>7</td>
<td>Inventory control subject to uncertain demand: newsvendor problem; (Q,R) policy</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Service Levels, (s,S) policy; MRP and JIT</td>
<td>5, 8</td>
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<tr>
<td>9</td>
<td>Explosion calculus and simple lot-sizing methods; Fundamentals of JIT and mechanics of Kanban</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>Exam 2; Operations Scheduling</td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td>Single machine sequencing problems</td>
<td>9</td>
</tr>
<tr>
<td>12</td>
<td>Multi-machine sequencing problems</td>
<td>9</td>
</tr>
<tr>
<td>13</td>
<td>Project Scheduling: CPM</td>
<td>10</td>
</tr>
<tr>
<td>14</td>
<td>PERT</td>
<td>10</td>
</tr>
</tbody>
</table>

Final exam during the week of finals

**Other Pertinent Course Information**

N/A

**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](http://disability.tamu.edu)

**Academic Integrity**

For additional information please visit: [http://aggiehonor.tamu.edu](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*.