IE 563
ADVANCED PRODUCTION PLANNING AND CONTROL
WINTER 2019

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Office Hours: T, TR 1:30 – 2:30 p.m.
Other times by appointment; please call or e-mail.

Class Schedule: T, TR: 4:00 – 5:20 pm
Credit Hours: 3
Prerequisite: Graduate Standing
Revision Date: December 27, 2018

Course Description:


References:
Course Website: http://classes.engr.oregonstate.edu/mime/winter2019/ie563

Course Learning Outcomes

1. Describe the various components that make up the manufacturing planning and control system and the interactions among them.
2. Develop the models that are applicable for supply chain inventory management, including those for quantity discounts, safety stocks, order quantity and reorder point interactions.
3. Develop the algorithms that are appropriate for solving single-machine, two-machine, parallel-machines and flow shop scheduling problems.
4. Show how (i) the material requirement plans, manufacturing resource plans, and capacity requirement plans can be developed, and (ii) lot sizing decisions can be made for a manufacturing system.
5. Describe the issues concerning just-in-time (JIT) manufacturing and its benefits.

Sequence of Topics:

1. Supply chain inventory management (Chapter 11).
2. Scheduling (Chapter 8A)
3. Elements of master production scheduling (MPS) and material requirements planning (MRP): MPS, MRP, lot sizing, and manufacturing resource planning (MRP-II) (Chapters 5, 6, and 6A)
4. Capacity requirements planning (CRP) (Chapter 7).
5. Just-in-Time (JIT) manufacturing (Chapter 9).

Grading Policy:

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>Mid-Term test</td>
<td>25%</td>
<td>Tuesday, February 12</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
<td>Wednesday, March 20</td>
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<td>(9:30 - 11:20 a.m.)</td>
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<tr>
<td>Homework (problem + computer)</td>
<td>20%</td>
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<tr>
<td>assignments</td>
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<tr>
<td>Term project</td>
<td>25%</td>
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- Seeking assistance from students who had taken this course before and/or acquiring materials/solutions they had access to when they were enrolled in the course, including
work of their own, are strictly prohibited.

- During class, the use of cell phone/iPad to surf the web, to check emails, and/or to send/receive texts is strictly prohibited.

- During class, leaving and entering the classroom is strictly prohibited.

- During class, engaging in conversations with your neighbor or conducting yourself in a manner that is disruptive to the class is strictly prohibited.

- Arriving late to class or leaving early is strictly prohibited.

- Attendance in class is a MUST. Students who are unable to attend a class due to an illness or another valid reason must keep the instructor notified via email. In other words, perfect attendance is required unless there is a valid reason for missing a class, notified by email.

HOMEWORK: Individual effort

TERM PROJECT: Group effort. Each student in a group is required to work jointly with the rest of the group by contributing their share of effort in the pursuit and completion of the term project. If a student is found not to make his/her share of contribution, the rest of the group MUST bring the matter to the attention of the instructor immediately. If evidence of such non-contribution was found, the instructor will remove the student from the group and ask him/her to work independently on the project and turn in a report.

1. Mid-Term Exam and the Final Exam will be given on the dates indicated above. Students viewing the test at the scheduled time are considered to have taken the test. There is no makeup for these tests.
2. Assignments must be turned in at 5:20 p.m. (or as specified in class) on the due date. Late assignments will not be accepted.
3. A student’s academic record is a relatively permanent record of that student’s performance and activities while in school. It is important that each student and the integrity of each student’s record be protected.
4. Students are responsible for any changes to this syllabus announced in class. These can be in the form of discussions/announcements in class and/or communications via email to the entire class list.

CODE OF STUDENT CONDUCT
Students are held responsible for detailed Code of Student Conduct listed at:

http://studentlife.oregonstate.edu/code. Specifics on Academic Misconduct ONLY are also listed below.

The following academic misconduct is prohibited under the Code of Student Conduct:
4.2 Academic Misconduct

1. Academic Misconduct. Any action that misrepresents a student or group’s work, knowledge, or achievement, provides a potential or actual inequitable advantage, or compromises the integrity of the educational process. Prohibited behaviors include, but are not limited to doing or attempting the following actions:

a. Cheating. Unauthorized assistance, or access to or use of unauthorized materials, information, tools, or study aids. Examples include, but are not limited to, unauthorized collaboration or copying on a test or assignment, using prohibited materials and texts, unapproved use of cell phones, internet, or other electronic devices, etc.

b. Plagiarism. Representing the words or ideas of another person or presenting someone else's words, data, expressed ideas, or artistry as one's own. Examples include, but are not limited to, presenting someone else's opinions and theories as one's own, using another person's work or words (including unpublished material) without appropriate source documentation or citation, working jointly on a project and then submitting it as one's own, etc.

c. Falsification. Fabrication or invention of any information. Examples include, but are not limited to, falsifying research, inventing or falsely altering data, citing fictitious references, falsely recording or reporting attendance, hours, or engagement in activities such as internships, externships, field experiences, clinical activities, etc.

d. Assisting. Any action that helps another engage in academic misconduct. Examples include, but are not limited to, providing materials or assistance without approval, altering someone's work, grades or academic records, taking a test/doing an assignment for someone else, compelling acquisition, selling, bribing, paying or accepting payment for academic work or assistance that contributes to academic misconduct, etc.

e. Tampering. Interfering with an instructor’s evaluation of work by altering materials or documents, tampering with evaluation tools, or other means of interfering.

f. Multiple submissions of work. Using or submitting work completed for another or previous class or requirement, without appropriate disclosure, citation, and instructor approval.

g. Unauthorized recording and use. Recording and/or dissemination of instructional content without the express permission of the instructor(s), or an approved accommodation coordinated via Disability Access Services.

Any student found to have committed or to have attempted to commit the above described academic misconduct is subject to the sanctions outlined in Section 6: Sanctions in:


EXPECTATIONS:
The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student's freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity
and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and
learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary
action. Behaviors that create a hostile, offensive or intimidating environment based on gender,
race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred
to the Affirmative Action Office.

**Statement Regarding Students with Disabilities:**
Accommodations for students with disabilities are determined and approved by Disability Access
Services (DAS). If you, as a student, believe you are eligible for accommodations but have not
obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic
accommodations and coordinates implementation of those accommodations. While not required,
students and faculty members are encouraged to discuss details of the implementation of individual
accommodations.