
COURSE OBJECTIVES:

Operations Management is concerned with the creation of goods and services and embodies the collection of knowledge dealing with the design, planning, operation and control of systems for converting inputs into outputs. The course treats operations management as a functional area of an organization and it examines its interaction with the other functions of the organizations. Although strategic issues are mentioned, the lectures concentrate on tactical and operational issues. The course will also emphasize on an intensive study of the elements associated with the design and operation of a high tech productive system and the integration of these elements within the entire corporate strategy.

Operations Research approaches are discussed and emphasized to support strategies used by the high-tech organization.

PREREQUISITES:
BUS 304 and the pre-requisites listed in the course catalogue. The instructor reserves the right to administratively drop, at any point, any student who has not met the prerequisites. Students choosing to withdraw from this course are responsible for doing so according to university procedures and deadlines.

GRADING POLICY:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments and cases</td>
<td>15%</td>
</tr>
<tr>
<td>Project and Presentation</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm</td>
<td>30%</td>
</tr>
<tr>
<td>Final</td>
<td>35%</td>
</tr>
<tr>
<td>Other (Class participation, Quizzes)</td>
<td>5%</td>
</tr>
</tbody>
</table>

Homework is due a week after it is assigned. No late assignments are accepted.

Missing a class is not an acceptable excuse for late homework, and it is the student’s responsibility to find out about the homework assignments.

There will be at least one plant tour throughout the semester. The date, time and place will be announced at a later date. Students are required to participate.

Class participation and behavior: Note that Class Participation forms an important component of the final grade. Students can only score well in that if they regularly attend
and actively participate in class discussions. Each student brings experience that others in the class can benefit from and thus individual attendance can enhance the learning experience of the entire class (including the instructor). Students are expected to respect the rights of their classmates by exhibiting behavior that is conducive (or not disruptive) to the learning environment of the classroom. Cell phones should be turned off or put on silent ring or vibrate. Phone calls should not be made or taken during the class period. If there is an emergency situation that prevents you from adhering to this policy, please see your instructor to discuss it as soon as possible. **Students are expected to refrain from using computers during class time for activities that are NOT related to the class topic being discussed that day.** These activities include, but are not limited to game playing, instant messaging, etc.

A group project which requires application of concepts learned through course work, discussion of current events, and assigned readings is a requirement for this course. Projects should be focused on concerns about the productivity trends for manufacturing and service organizations and the competitiveness problem in a global market. Some topics of interest are listed below (The list is by no means comprehensive)

- Outsourcing
- Ethics (Operations Management issues)
- ERP, MRP
- ISO 9000
- Supply Chain Management
- Revenue Management
- Postponement
- Green Manufacturing
- ISO 14000
- Outsourcing

Each group will comprise of a maximum of 3 students. Students are strongly advised to form their own groups immediately after class. Each team member will be given the opportunity to evaluate the contribution of other team members. A written report (10 - 15 pages) is due on the day of the final. All group members should participate in writing of the report. The objective of the group project is to come out with a first-class cooperative effort. Each team will be required to make a 20-minute presentation of the major findings during the last two class meetings.

There is a one page typed proposal due on April 4, 2007. The proposal should include a 100-word (maximum) abstract of your project.

The content of the main body of the report should include the usual introduction and a brief historical perspective of the topic to provide background information to the reader. In addition, the paper should present convincing arguments as to why the topic is important to managers and how it relates to operations management. Attempt to link your topic with the U.S. competitiveness problem. Evaluate the current trend and leading edge issues of the topic. Use evidence from books, articles, or even interviews to support your arguments. Recent evidence is usually more convincing than older citations.
Reports will be evaluated for such factors as:
1 - Apparent understanding of the topic
2 - Originality of treatment (not just a series of quotations with or without attribution)
3 - Accuracy of discussion
4 - Comprehensiveness of the paper's content and depth of analysis
5 - Clarity and mechanics of presentation such as organization, format, and grammar
6 - Quality of literary sources used for reference

**Topics**

**Week 1**  
**Introduction**  
Productivity defined  
Services Vs Manufacturing  
Trends in OM  
OM Vs Other Functions of the Organization  
Global Competitiveness  
Supply Chain

**Week 1, 2**  
**Introducing New Products and Services**  
Process Design  
Video: OM in Action: Process Choice at a Bakery  
Types of Processes, Facets of Process design

**Week 2, 3**  
**Facility Layout**  
Process Layout  
Product Layout  
Cellular Manufacturing, Group Technology

**Week 3, 4, 5**  
**Project Planning**  
Developing Project Networks  
PERT/CPM  
Cost and Resource Considerations

**Week 5, 6, 7**  
**Forecasting**  
Qualitative Methods  
Quantitative Methods  
*Time Series Models  
Smoothing Models  
Classical Decomposition  
*Causal Methods  
Linear Regression

**Week 8**  
**Midterm EXAM**

**Week 8, 9, 10**  
**Inventory Models**  
Independent Demand  
Deterministic Models  
Probabilistic Models

**Chapter**

1,2  
4  
6  
17  
3  
11, 12, 13, 14
Just In Time Systems
Supply Chain Management – The “Bullwhip effect”
Dependent Demand
Material Requirement Planning

<table>
<thead>
<tr>
<th>Week 10, 11, 12</th>
<th><strong>Queuing Models</strong></th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Server Models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple server Models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic Analysis of Queuing Systems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 13, 14</th>
<th><strong>Quality</strong></th>
<th>9, 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Statistical Quality Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process Control and Capability (Quality) Indices, TQM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Week 15**

**Presentations**

**FINAL** (Final will be comprehensive)

_It is the student’s responsibility to understand and follow the University Policies as stated in the catalog._