Course: Production and Operations Management - POM 3310 -180

Prerequisites: As listed in your TAMIU course catalog. DS2310: Business Statistics

Instructor: Dr. Balaji Janamanchi
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Office: PH 304C Phone: 956-326-2537

Office Hours: MTWT 10.00 to 11.00 p.m. and by appointment


Supplementary Texts and Materials: Certain learning aids may be required or suggested during the semester. When appropriate, these materials will be placed online or on reserve in the library.

Course Description: As per current TAMIU course catalog: Introduces the student to planning, organizing, and controlling production and service systems. The impact of new product and process technologies will also be covered. Written and/or oral presentations are required. Prerequisite: DS 2310. See at URL: http://www.tamiu.edu/catalog/current/courses/pom3310.shtml

Course Objectives: To develop student's basic understanding of production and operations management principles, will include both practical applications and integration of various management tools, techniques and skills.

Expected learning Outcomes: Students are expected to learn
1. To demonstrate working knowledge of the operations management terminology and technological trends.
2. To develop certain quantitative skills, competencies, and points of view needed by organizations involved in the “Input Transformation and Output” process.
3. To be able to adequately produce basic written reports on Operations Management processes.
Grading Policy: Grades will be determined with the following weights for components:

3 Tests 300 points
12 Assignments 120 points
Class participation 30 points
Final Project Report 50 points

Total 500 points

A letter grade of “A” will be given for a total score of 450 or more points.
A letter grade of “B” will be given for a total score of 400 or more but less than 450.
A letter grade of “C” will be given for a total score of 350 or more but less than 400.
A letter grade of “D” will be given for a total score of 300 or more but less than 350.
A letter grade of “F” will be given for a total score of less than 300.

Attendance Policy:
Typically, in an onsite course, students are expected to attend and be prepared for all classes. Missing classes without prior permission for valid and acceptable excuses (such as family emergencies/doctor’s appointments/interviews/representing the university at events) will result in loss of class participation points.

IMPORTANT:
This is an online course. A significant difference between online and more traditional lecture or face-to-face courses is that in an online course the student is much more responsible for carefully, thoroughly, and thoughtfully reading and reviewing the assigned material. Paying attention to detail is crucial. Furthermore, the style of communication in an online course is different than in a face-to-face class. While an online student can always use email to ask the instructor questions or request more information, this lacks the immediacy and richness of communication in a face-to-face class.

The course will be conducted via TAMIU's eLearning facility (ANGEL). Students are expected to learn how to log on to and use ANGEL on their own. Information about ANGEL is available at https://elearning.tamiu.edu/section/default.asp?format=course&id=ESO Please review this information, including the guides, instructions, and videos for using ANGEL. If you have any questions please feel free to contact me. The preferred method is via ANGEL’s email service. If you have difficulty with that my TAMIU email address, office phone number, and office hours are at the top of this syllabus.

You are required to participate in the discussion forum each week to ensure a better learning experience. Participation in the discussion forum counts towards the class participation points. Each of you after reading the chapter and submitting the assignment is required to post a brief note of 50 words or less on discussion forum to report, “What new knowledge did you gain from the chapter that you didn’t know before reading the chapter” and “how may this new knowledge be useful to you in your studies/work/life or otherwise”.
Example of weekly post on Discussion Forum: after reading chapter 1 one may post:
“I now know that, All firms/businesses are engaged in producing products or providing
services. Products are tangible while services are intangible” (OR Operations and Supply
Chain management is the design, operation and improvement of the systems that create
and deliver a firm’s primary products and services / OR While many of the Operations
Management basic concepts have been around for years, their application in new and
innovative ways is exciting). And
“Knowing this will help me, Understand better the concepts and discussions in my other
business courses” (OR Relate what I see in daily life events to the products/services
discussed in the chapter / OR Use this knowledge at work in writing my reports or
planning for activities).

Administrative Policies:
Class policies focus on involvement and integrity. Involvement refers to being prepared
before class, attending, and participating. Be sure to read all class assignments. You
are still responsible for assigned material whether it is discussed in class or not.
Do not hesitate to come to office hours with any questions about course material. I
encourage such inquiry. However, as a standard practice I will not provide guidance/
help with homework assignments on the day they are due (you must plan your work
ahead of time and seek help prior to the day an assignment is due).
Involvement also refers to attendance and active listening. These two behaviors should
help you to learn the material better and to succeed in exams, cases, and a number of
unannounced quizzes and exercises that will be given during the semester (some of them
for extra credit).

TAMIU Administrative Policies
1. Should a faculty member discover that a student has committed plagiarism, the student
   will receive a grade of "F" in that course and the matter will be referred to the Executive
   Director of Student Life for possible disciplinary action.
2. The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce
   their work and distribute copies of their work. Works that receive copyright protection
   include published works such as a textbook. Copying a textbook without permission from
   the owner of the copyright may constitute copyright infringement. Civil and criminal
   penalties may be assessed for copyright infringement. Civil penalties include damages up
   to $100,000; criminal penalties include a fine of up to $250,000 and imprisonment.
3. The university is composed of a diverse student body that has a number of different
   religious beliefs. Reasonable accommodations will be made to allow students to practice
   their beliefs. It is the responsibility of the student to inform the instructor in advance
   when there is a conflict between scheduled classroom activities (examinations, quizzes,
   etc.) and religious holidays.
4. Students diagnosed with ADA recognized problems should contact [the] Director of
   Counseling (CH 312A - 326-2230). Students who have not been diagnosed with an ADA
   condition but feel that they might be eligible for assistance under the provisions of ADA
   are encouraged to contact the Director of Counseling
Policies provided by TAMIU administration.
# Course Calendar

## Topical Outline:

<table>
<thead>
<tr>
<th>Week/Date</th>
<th>Topics</th>
<th>Readings and Assignments</th>
<th>Learning outcomes addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 8/27-8/30</td>
<td>Introduction:</td>
<td>Chapter 1 Review Syllabus, Course Intro. and ANGEL material Read Chapter 1 and related class notes <strong>Complete ANGEL assignment by 8/31</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 2 9/1</td>
<td>Operations and Supply Chain Management</td>
<td>Read Chapter 1 and related class notes <strong>Complete Chapter 1 assignment by 9/2</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 3 9/8</td>
<td>Strategy and Sustainability</td>
<td>Read Chapter 2 and related class notes <strong>Chapter 2 assignments by 9/9</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 4 9/15</td>
<td>Forecasting</td>
<td>Read Chapter 3 and related class notes <strong>Complete Chapter 3 assignment by 9/16</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 5 9/22</td>
<td>Strategic Capacity Management</td>
<td>Read Chapter 4 and related class notes <strong>Complete Chapter 4 assignment by 9/23</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 6 9/29</td>
<td><strong>Test 1 Chapters 1-4</strong></td>
<td><strong>Take exam 1 on 9/30</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 7 10/6</td>
<td>Project Management</td>
<td>Read Chapter 5 and related class notes <strong>Complete Chapter 5 assignment by 10/7</strong></td>
<td>1 &amp; 2</td>
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<tr>
<td>Week 8 10/13</td>
<td>Manufacturing Processes</td>
<td>Read Chapter 6 and related class notes <strong>Complete Chapter 6 assignment by 10/14</strong></td>
<td>1 &amp; 2</td>
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<tr>
<td>Week 9 10/20</td>
<td>Service Processes</td>
<td>Read Chapter 7 and related class notes <strong>Complete Chapter 7 assignment by 10/21</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 10 10/27</td>
<td>Sales and Operations</td>
<td>Read Chapter 8 and related class notes <strong>Complete Chapter 8 assignment by 10/28</strong></td>
<td>1 &amp; 2</td>
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<tr>
<td>Week 11 11/3</td>
<td><strong>Test 2 Chapters 5-8</strong></td>
<td><strong>Take exam 2 on 11/4</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 12 11/10</td>
<td>Materials Requirement Planning</td>
<td>Read Chapter 9 and related class notes <strong>Complete Chapter 9 assignment by 11/11</strong></td>
<td>1 &amp; 2</td>
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<tr>
<td>Week 13 11/17</td>
<td>Quality Management and Six Sigma</td>
<td>Read Chapter 10 and related class notes <strong>Complete Chapter 10 assignment by 11/18</strong></td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Week 14 11/24</td>
<td>Inventory Management <strong>Project Report</strong></td>
<td>Read Chapter 11 and related class notes <strong>Complete Chapter 11 assignment by 11/25 Project Report Due by 11/30</strong></td>
<td>1, 2 &amp; 3</td>
</tr>
<tr>
<td>Week 15 12/1</td>
<td>Lean Supply Chain</td>
<td>Read Chapter 12 and related class notes <strong>Complete Chapter 12 assignment by 12/2</strong></td>
<td>1, 2 &amp; 3</td>
</tr>
<tr>
<td>Week 16 12/8</td>
<td>Tuesday 12/9 - <strong>Final test over Chapters 9, 10, 11 and 12</strong></td>
<td><strong>Take Final on 12/9</strong> Note Test is on TUESDAY: Final will be open from 10.00 a.m. to 10.00 next morning</td>
<td>1 &amp; 2</td>
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Instructor reserves the right to adjust the syllabus during the course of the semester.

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Project Description
(Objectives & Perspective)

Please read this document several times over the semester so that you have a very clear idea of what is required of you in this project.

The Objective: The objective of the project is to enhance your learning of the material in this course by applying theories, concepts, and tools learnt in class to a realistic business case. This purpose can be best achieved if you select a product early on and work on the selected project diligently and consistently throughout the semester as we go through the material of each chapter. You will be required to develop and submit a project report (about 10 pages plus any attachments) by the end of 14th week of the semester.

The perspective: For your project report, you take the perspective of the promoters / owners of the business enterprise engaged in the manufacture of the product or provision of a service. Decision about the form of organization and region of operations etc is a matter of your choice. Basically, you will write the report assuming the reader to be your prospective investors and or customers, and try to address readers’ interest, questions and concerns in a professional manner with meaningful and clear explanations.

In your project report you will first, outline the business and operations strategy, mission statement, core competencies, product and process design, and quality considerations in the manufacturing process for the product/service you have selected. Then you will proceed to analyze and select a production location or locations, forecast your production requirements, plan the capacity of your production facility, schedule considerations, and establish the necessary supply chain partnerships. Additionally, you will need to discuss what your inventory management policies will be, and your plans for implementing ERP and Lean management in your production facility. **You will need to include the following sections in your Project Report:**

1. **Mission Statement** that addresses minimally, what business will the company is in, who the customers are, and how will the company’s basic beliefs define the business.

2. **Strategy:** How do you plan to gain a competitive advantage in the market place, or in other words, “**what are your core competencies?**” Try to address the question, whether your company will compete on, cost, quality, time (speed), or flexibility? Or on a combination of two or more of these dimensions.

3. Results of **environmental scanning** (government regulations, trends, opportunities, threats, etc.) and the factors influencing your choice of product, process etc.

4. A detailed **description of your product** (include complete details of the component parts, and the process of manufacture). You may also want to discuss, How did you pick your product?
   a) Idea development  
   b) Product screening (alternate products considered etc.)  
   c) Preliminary design and testing (pilot, samples, any market tests etc.)  
   d) Final design (components, processes,
material, machinery and other resources necessary to manufacture your product- including any outsourcing)

5. How will you ensure consistent **quality in your products and processes**? How do your company’s standards compare with the industry standards? Any benchmarking etc.

6. **Forecasting**: Decide what to forecast. Evaluate and analyze appropriate data (industry, regional, and national including demand data from a similar company). Select the **forecasting method** (quantitative, not qualitative) and justify your selection. Generate forecasts (please include as attachments). How will you check accuracy of your forecasts? Will you forecast for seasonality and if so, how? Explain.

7. **Operations planning**: Determine the necessary **production capacity** of your facility based on your demand forecasts? What productivity measurements will you use?

8. **Location Consideration**: Describe the steps/analysis that you followed to determine the best **location** for your facility. Discuss, a) Regional-national considerations, proximity to sources of supply, customers, or sources of labor. b) Community considerations (any use of break-even analysis or other technique), and c) Site considerations. Outline your **supply chain strategy** and discuss how it impacted your facility location decision (from raw material to customer).

9. **Manufacturing**: Describe how you will **manufacture** your product (machines, labor, robotics, etc.). What type of manufacturing process layout will you use and why? Keep in mind that you will most likely utilize just-in-time (JIT) to the extent possible. Also recall the process of manufacture you chose, namely, continuous process, flow shop, cellular, job shop, project, or a hybrid (combination of two or more of the former)

10. Develop a diagram (attachment) of the **facility layout** and justify your layout choice. Show how the product flows through the facility from raw materials to finished product.

Note: Diagrams should reflect space requirements for each function (machine, operator, and WIP, etc.). Discuss briefly, what happens at each station, and show **output at each station** (pieces per hour or similar measure).

11. How will you utilize **“just-in-time”** concepts in your facility? Discuss your **Inventory management** policies and **ERP** implementation, if any?

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Note: Instructor reserves the right to make suitable adjustments to this document to clarify/amplify any of the requirements above. For clarifications and comments contact instructor at bjanamanchi@tamiu.edu