MANAGING OPERATIONS AND SERVICES (80331, MGTK 511-110)  
SYLLABUS, FALL 2015

MEETING TIME & LOCATION:
Online

INSTRUCTOR:
Name: Dr. Seung Jae Park  
Office: Founder’s Hall, 323U 
Office Hours: 11AM – 12PM & 3PM – 5PM on Every Monday and Wednesday 
Any questions and/or comments regarding this course:
   Send messages through the Blackboard  
   (Course Communication-> Virtual Office-> Course Messages)
Anything else: 
   Feel free to email to s.park@tamuct.edu
Phone: 254-501-5849

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message. By enrolling in UNILERT, university officials can quickly pass on safety-related 
information, regardless of your location. Please enroll today at TAMUCT.org/UNILERT

COURSE DESCRIPTION AND OVERVIEW:
A study of concepts, models and methods used to effectively manage the manufacturing and/or 
service operations of for-profit and not-for-profit organizations. Emphasis will be placed on the 
design and use of cross-functional operations planning, control, and support systems. Topics of 
contemporary relevance will be examined to include supply chain management, enterprise resource 
planning, time-based competition, and quality improvement.

Operations management involves the integration of numerous activities and processes to produce 
products and services in a highly competitive global environment. Many companies have 
experienced a decline in market share as a result of their inability to compete on the basis of 
responsiveness, cost or quality. Most now agree that world class performance in operations is 
essential for competitive success and long-term survival. We consider key performance measures of 
operations (productivity, flexibility, quality, and response time) as well as important concepts for 
 improving the performance of operations along these dimensions. At the end of the course, students 
will have a fair understanding of the role that operations management plays in business processes. 
Emphasis is given both to familiarization with various production processes and service systems,
and to quantitative analysis of problems arising in the management of operations. **Prerequisite:** GBK 311 or equivalent

**COURSE OBJECTIVE:**
The course seeks to both improve your understanding of operations management and enhance your analytical skills. The course will present several analytical techniques which would aid you in making decisions in the real world. In the meanwhile, the course will introduce you various aspects, issues, and initiatives in nowadays business operations. At the end of this course, you should have

- Understanding of the importance and the challenges of operations management;
- Understanding of various processes for production and service systems;
- Acquired analytical capability to uncover problems and improvement opportunities in operations

**COURSE MATERIALS:**
- (REQUIRED) Course packet with 4 cases. It is available at [https://cb.hbsp.harvard.edu/cbmp/access/38375496](https://cb.hbsp.harvard.edu/cbmp/access/38375496)
  - You can buy the packet at the above website (Harvard Business Publisher) after registration. Please use your “School E-mail Account” (e.g., xxx@my.tamuct.edu) when you register at the website.
- (REQUIRED) Access to a computer with Microsoft Office (Word, PowerPoint, and Excel)

**NOTE:** A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore.

- Course website: All materials available in electronic format (lecture slides/notes, homework assignments, homework solutions, sample exams, exam solutions, etc.) will be posted at Blackboard course website ([https://tamuct.blackboard.com](https://tamuct.blackboard.com)). Lecture slides/notes will be posted before the class week. Homework solutions will be posted the next morning after the due date.

**COURSE EVALUATION:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm (Week 7)</td>
<td>40%</td>
</tr>
<tr>
<td>Final Exam (Week 16)</td>
<td>40%</td>
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</tbody>
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**Grade Computation:** Students earn their course grades by completing scheduled assignments; no extra credit assignments are given. To pass this course satisfactorily, students must complete each of the graded items. Failure to complete appropriate assignments and exams may result in a failing grade. Refusal to complete homework assignments will result in a failing grade.

**Grading Scale:**

- A = 90 - 100 %
- B = 80 - 89.99%
- C = 70-79.99%
- D = 60 - 60.99%
- F = 59.99% and below
Exams: The exams may contain true/false, multiple choice, short answer, and exercises. No makeup exams unless appropriate paperwork is provided for rescheduling. You have to upload your answers at Blackboard course website: https://tamuct.blackboard.com. Submissions can be either typed or hand-written. Please make sure that it should be READABLE.

Homework Assignments: There are 12 assignments throughout the semester (see the “Course Schedule” below). Homework assignments will be graded on a scale of 0 to 10. Points will be given for correctness of your answers, effort, and presentation. A grade of zero will be assigned if you do not turn in the homework. Homework due can be found from the “Course Schedule” below.

- Each assignment must be submitted no later than the end of the due week. For example, HW#1 must be submitted until 11:59 PM on September 6, 2015. NO LATE HOMEWORK WILL BE ACCEPTED.
- You may discuss the assigned problems with your classmates. But you should write YOUR OWN solutions and you should note on your submissions who you have discussed with.
- You should provide formulas, steps, or reasons to support your solutions. Submissions with only the final solutions will not be given any credit.
- You have to upload your answers at Blackboard course website: https://tamuct.blackboard.com. Submissions can be either typed or hand-written. Please make sure that it should be READABLE.
- **Regrade Requests:** If you wish a regrade of any homework assignment or exam, please appeal it within SEVEN CALENDAR DAYS of the date that I attempt to return it to you. After these seven days, I will consider all grades final. Please realize that there are standard policies for point deductions for each problem with any exam or assignment. Thus, unless the grader has misapprehended your intent or misread your work, any partial credit is unlikely to change.

COURSE SCHEDULE:
The following is a tentative schedule of meetings, readings, and deliverables for the semester. This is subject to change. When there are major changes, you will be notified by email; a current schedule will always be available on the Blackboard course website.

**Note 1.** CP: the course packet; CT: the recommend text book (i.e., Cachon and Terwiesch). Lecture slides will contain more or less materials than the textbook. Homework assignments and exams are designed according to the materials covered in the lecture slides. Thus, lecture slides are always a part of the materials required.

**Note 2.** Sessions 20, 22, 23, 26, and 27 are based on other books. If you want to learn more about these Sessions, please refer: Options, Futures, and Other Derivatives by John C. Hull for Session 20; Supply Chain Management: Strategy, Planning, and Operations by Sunil Chopra and Peter Meindl for Sessions 22 & 23; Operations Management by William Stevenson for Sessions 26 & 27.
<table>
<thead>
<tr>
<th>Week</th>
<th>Session/Topic</th>
<th>Readings</th>
<th>HW Due</th>
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<tbody>
<tr>
<td><strong>Week 1:</strong> 8/24-8/30</td>
<td>Session 0: Introduction to MGTK 511; Session 1: Process Flow Diagram;</td>
<td>CT: Chapters 1 &amp; 2 Slides (always)</td>
<td>Extra HW</td>
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<tr>
<td><strong>Week 2:</strong> 8/31-9/6</td>
<td>Session 2: Capacity Analysis; Session 3: Kristen’s Cookies case study;</td>
<td>CT: Chapters 2 &amp; 3 CP: Kristen’s Cookies</td>
<td>HW#1</td>
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<td><strong>Week 3:</strong> 9/7-9/13</td>
<td>Session 4: Flow Analysis; Session 5: Line Balancing;</td>
<td>CT: Chapters 3 &amp; 4</td>
<td>HW#2</td>
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<td><strong>Week 4:</strong> 9/14-9/20</td>
<td>Session 6: Benihana case study; Session 7: Batching</td>
<td>CP: Benihana CT: Chapter 4</td>
<td>HW#3</td>
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<td><strong>Week 5:</strong> 9/21-9/27</td>
<td>Session 8: Project Management I; Session 9: Project Management II</td>
<td>CT: Chapter 5</td>
<td>HW#4</td>
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<td><strong>Week 6:</strong> 9/28-10/4</td>
<td>Session 10: Economic Order Quantity Model;</td>
<td>CT: Chapter 7</td>
<td>HW#5</td>
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<tr>
<td><strong>Week 7:</strong> 10/5-10/11</td>
<td>Mid-term Exam (Due by Oct. 11)</td>
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**Module 2. Variability into Business Process Analysis**

| Week 8: 10/12-10/18 | Session 11: Queueing System I; Session 12: Queueing System II | CT: Chapter 8 | HW#6 |
| **Week 9:** 10/19-10/25 | Session 13: Quality Management I; Session 14: Quality Management II | CT: Chapter 10 | HW#7 |

**Module 3. Inventory and Revenue Management**

| Week 10: 10/26-11/1 | Session 15: Quality wireless case; Session 16: Newsvendor Model I | CP: Quality wireless CT: Chapter 12 | HW#8 |
| **Week 11:** 11/2-11/8 | Session 17: Newsvendor Model II | CT: Chapter 13 | HW#9 |
| **Week 12:** 11/9-11/15 | Session 19: Revenue Management; Session 20: Operational and Financial Hedging | CT: Chapters 15 & 16 Other books | HW#10 |

**Module 4. Demand Forecasting and Supply Chain Management**

| Week 13: 11/16-11/22 | Session 22: Demand Forecasting I; Session 23: Demand Forecasting II | Other books | HW#11 |
| **Week 14:** 11/23-11/29 | Session 24: Supply Chain Coordination; Session 25: Sustainable Operations | CT: Chapters 17 & 18 | HW#12 |
| **Week 15:** 11/30-12/6 | Session 26: Supply Chain Optimization I; Session 27: Supply Chain Optimization II | Other books | |
| **Week 16:** 12/7-12/11 | Final Exam (Due by Dec. 9) | | |
COMPETENCY GOALS AND STUDENT LEARNING OUTCOMES:

Module 1. Business Process Analysis: This module analyzes business processes without variability. That is, the analysis focuses on the business processes with constant demand rate, constant service time, constant processing time, and so forth. Module 1 covers topics on Process Capacity, Flow Analysis, Line Balancing, Batching, Project Management, Economic Order Quantity (EOQ) and Economic Production Quantity (EPQ). Class activities include lectures, business cases, homework assignments, and exams. At the end of this module, students should be able to

- Present the process view of an organization
- Explain and compute resource capacity and activity time
- Explain and compute bottlenecks, process capacity, rush order flow time in business processes
- Explain the make-to-stock and make-to-order
- Explain and compute flow rate, flow time and inventory
- Explain and use the Little’s law
- Explain and compute utilization, implied utilization, and cost of direct labor
- Explain the line balancing
- Analyze business process with batch
- Explain tradeoffs involved in batch size decision
- Explain and compute the recommended batch size
- Explain differences between process analysis and project management
- Present a project with a network diagram
- Compute the project duration and determine the critical activities
- Explain tradeoffs between early completion and costs in a project
- Explain inventory measures and compute inventory costs
- Explain tradeoffs in the Economic Order Quantity model
- Compute the economic order quantity
- Explain tradeoffs the Economic Production Quantity model
- Compute the economic production quantity

Module 2. Variability into Business Process Analysis: This module analyzes business processes with variability. That is, the analysis focuses on the business processes with uncertain demand rate, uncertain service time, uncertain processing time, and so forth. Module 2 covers topics on Queueing System and Quality Management. Class activities include lectures, business cases, homework assignments, and exams. At the end of this module, students should be able to

- Explain characteristics of queueing systems
- Explain and compute average arrival rate, average service rate, capacity, and utilization.
- Explain and compute waiting time and inventory in a queue and in a process.
- Explain the pooling system
- Explain and compute the best staff level in queueing systems
- Explain different kinds of variations in the process
- Explain and compute Type I and Type II errors
- Present statistical process control charts
- Explain and compute the process capability
Module 3. Inventory and Revenue Management: This module discusses inventory control, raw material procurement to maximize revenue or to minimize variability in business processes. That is, the analysis focuses on the business processes with uncertain demand and uncertain price, and so forth. Module 3 covers topics on Newsvendor Model, Quick Response, Revenue Management, and Operational and Financial Hedging. Class activities include lectures, business cases, homework assignments, and exams. At the end of this module, students should be able to

- Explain characteristics of the Newsvendor model
- Explain tradeoffs in the Newsvendor model
- Explain and compute overage cost, underage cost, and optimal ordering quantity
- Explain and compute waiting time and inventory in a queue and in a process.
- Explain and compute performance measures in the Newsvendor model
- Explain the quick response and compute the optimal ordering quantity with the quick response
- Explain characteristics of the revenue management
- Explain and compute protection levels and booking limits
- Explain and compute overbooking policies
- Explain operational risks
- Explain financial instruments to hedge operational risks
- Explain forward and futures contracts

Module 4. Demand Forecasting and Supply Chain Management: This module introduces the supply chain management. Discussion focuses on estimating customers’ demand, understanding and coordinating supply chains, being sustainable operations, and optimizing supply chain management. That is, Module 4 covers topics on Demand Forecasting, Supply Chain Coordination, Sustainable Operations, and Supply Chain Optimization. Class activities include lectures, homework assignments, and exams. At the end of this module, students should be able to

- Explain characteristics of demand forecasting
- Explain the single exponential smoothing method
- Explain the Holt’s method
- Explain the Winter’s method
- Explain supply chain structures
- Explain the bullwhip effect.
- Explain supply chain coordination
- Explain how operations influences sustainability
- Explain how sustainable thinking can influence operations management
- Explain the Linear Programming
- Solving supply chain optimization problems using the Excel Solver

GENERAL INFORMATION:
Drop Policy: If you discover that you need to drop this class, you must go to the Records Office and ask for the necessary paperwork. Professors cannot drop students; this is always the responsibility of the student. The record’s office will provide a deadline for which the form must be returned, completed and signed. Return the signed form to the records office, wait 24 hours, go into DuckTrax and confirm that you are no longer enrolled. If you are still enrolled, follow up with the records office immediately. You are to attend class until the procedure is complete to avoid penalty for
absence. Should you miss the deadline or fail to follow the procedure, you will receive an F in the course.

**Academic Integrity:** Texas A&M University - Central Texas expects all students to maintain high standards of honor in personal and scholarly conduct. Any deviation from this expectation may result in a minimum of a failing grade for the assignment and potentially a failing grade for the course. All academic dishonesty concerns will be reported to the university's Office of Student Conduct. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. When in doubt on collaboration, citation, or any issue, please contact me before taking a course of action. More information can be found at http://www.tamuct.edu/departments/studentconduct/academicintegrity.php

**Disability Support services:** At Texas A&M University - Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to an education that is barrier-free. The Office of Disability Support and Access is responsible for ensuring that students with a disability enjoy equal access to the University's programs, services and activities. Some aspects of this course or the way the course is taught may present barriers to learning due to a disability. If you feel this is the case, please contact Disability Support and Access at (254) 501-5831 in Warrior Hall, Ste. 212. For more information, please visit their website at www.tamuct.edu/DisabilitySupport. Any information you provide is private and confidential and will be treated as such.

**Tutoring:** Tutoring is available to all TAMUCT students, both on-campus and online. Subjects tutored include Accounting, Finance, Statistics, Mathematics, and Writing. Tutors are available at the Tutoring Center in Warrior Hall, Room 111. Visit http://www.tamuct.edu/departments/academicsupport/index.php and click "Tutoring Support" for tutor schedules and contact info. If you have questions, need to schedule a tutoring session, or if you're interested in becoming a tutor, contact Academic Support Programs at 254-501-5830 or by emailing tutoring@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables TAMU-CT students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in Mathematics, Writing, Career Writing, Chemistry, Physics, Biology, Spanish, Calculus, and Statistics. To access Tutor.com, log into your Blackboard account and click "Online Tutoring."

**Library Services:** INFORMATION LITERACY focuses on research skills which prepare individuals to live and work in an information-centered society. Librarians will work with students in the development of critical reasoning, ethical use of information, and the appropriate use of secondary research techniques. Help may include, yet is not limited to: exploration of information resources such as library collections and services, identification of subject databases and scholarly journals, and execution of effective search strategies. Library Resources are outlined and accessed at: http://www.tamuct.edu/departments/library/index.php