

Professional Business Analytic Program
Spring 2022
PBAN 803 – Operations Analytics

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Course objective:

Operations Analytics is concerned with the quantitative methods to design, manage, and improve the processes that transform inputs into finished goods or services. As it is one of the main functions of a firm, decisions made in operations have implications in other functions such as cost accounting, marketing and strategy. The objective of the course is to provide you with the basic tools to critically analyze a firm's operating performance and practices. You will be introduced to a set of decisions in operations ranging from tactical to strategic. When models are discussed, the focus will be on gaining insight on their application, their required inputs and correctly interpreting their outputs, rather than their mathematical derivation.

Learning outcomes:

Upon successful completion of the course, you should be able to:

- Define, analyze and evaluate the performance of processes;
- Understand the impact of process and demand variability;
- Understand the role of inventory and evaluate the strategic aspects of inventory policies;
- Identify the improvement opportunities for the processes and propose actions towards Six Sigma quality;
- Develop a coherent supply chain strategy by identifying the operational capabilities needed to support a firm's strategy;

Course textbook:

F. Robert Jacobs and Richard B. Chase, Operations and Supply Chain Management, 16th Edition, McGraw-Hill, © 2020.

Evaluation:

Simulation games & in-class assignments (individual):	30%
Quizzes (individual):	30%
Case assignments (group):	40%

Remarks:

- **Simulation games** will be played during the class time (or offline in the interest of time) and individual grades are assigned to the students based on their participation and their performance in the game.
- **In-class exercises** are numerical examples that we develop together during the class (mainly in MS Excel) to reinforce the quantitative topics discussed in the course. The students are then asked to submit their work individually, as part of their evaluation.
- **Quizzes** will be given on each of the main topics of the course, the week after the topic is fully discussed and some examples are solved.
- **Case assignments** are done in groups. The students will be asked to read the articles or the case individually, and the groups will be asked to work on their presentation or reflection during or before the class time and then present their work in class.
- To enrich the participatory learning environment of the program, the students are encouraged to be present in class on time and well-prepared, by studying the assigned core readings, articles and cases beforehand and participating in class discussions with insightful and constructive comments and questions.
- SUCourse and email are the official means of communication in this course and it is the student's responsibility to review messages and posts frequently.
- All submitted in-class, quiz and case assignments must directly reflect the individual or the team's own work and all members' participation. Please do not share your work with others, as that will be considered collusion. Cheating, plagiarism or collusion could result in an F grade and disciplinary action.
- Slight changes might be made to the course contents and the schedule, based on the students' feedback or upcoming circumstances.

Course Program:

Week	Topic	Book Chapter	Articles, Cases & Simulation Games (HBSP Course Pack)
1	Introduction to O&SCM Operations Strategy	1&2	The History and Future of Operations Coronavirus & Resilient Supply Chains
2	Process Analysis & Design	5 & 7	Oliver's Diner
3	Service Processes & Waiting Lines	9 & 10	Multiple Server Queues Managing Security Screening Lines at Logan Airport
4	Demand Forecasting	18	Managing with Analytics at Procter & Gamble Benihana of Tokyo (for reading only) Benihana V2
5	Inventory Management, MRP & Supply Chain Management	20 & 21	Inventory Basics Amazon Go Apple Inc. Root Beer Game V2
6	Quality Management & Six Sigma	12 & 13	Six Sigma: A Basic Overview Samsung Electronics Quality Analytics
7	AI and Operations Technology	---	Global Supply Chain Management Simulation V2 A Brief History of AI AI and The Future of Work AI and ML as Business Tools Bringing Blockchain, IoT, and Analytics to Supply Chains Vispera