

National University of Singapore
Department of Analytics & Operations

Module Code:DAO2703/DSC2006

Module Title: Operations and Technology Management

Duration: 10 Aug 2021 – 4 Dec 2021

Semester: Semester 1, Academic Year 2021/2022

Time/Venue: Wednesday 10:00 – 12:00 / E-Learn_C

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Module Description:

All organizations have an operations function that is primarily responsible for the production and delivery of their products and services. Therefore, the management of this operations function (i.e. ***Operations Management***) not only affects final product quality but also impacts customer service and the overall competitiveness of the organization. In order to improve its overall competitiveness, organizations may adopt various types of technology to facilitate various functions of the organization including operations function. So, how to manage the use of technology (i.e. ***Technology Management***) plays an important role in realizing the objective of using technology to improve an organization's overall competitiveness. The primary objectives of module are to provide students with an introduction to, and an understanding of, the substantive knowledge which has developed over the years in the field of ***Operations Management (OM)*** as well as ***Technology Management (TM)*** in enterprises.

This module will build around the traditional foundational topics of ***OM***, together with discussions on the opportunities and pitfalls organizations may face when adopting **technology** in order to improve their overall competitiveness. We will also attempt to highlight some of the more current issues in the field. Students will be exposed to topics such as product (or service) and process technology, process analysis and design, quality management, capacity planning and inventory management as well as supply chain management in both manufacturing and service organizations.

Learning Objectives:

- Introduce key OM concepts such as process flow diagram, capacity, process flow units, flow rate and flow time, cycle time, inventory, quality and control
- Introduce a few important OM theories such as Little's law, Lean 6 sigma quality, and bottleneck analysis and process improvement
- Introduce some OM tools such as inventory management
- Discuss trade-offs organizations may face when improving processes and adopting technology

- Expose students to Asian business contents related to Operations and Technology Management
- To improve the students' communication and team work coordination skills. The students will be required to make presentations during tutorials as well as team projects.
- The course will include sustainability issues related to OM
- Raise the awareness and interests in the function of Operations

Prerequisites:

Although no prerequisite is stated, this module assumes prior knowledge of basic algebra, calculus, probability and statistics (i.e. expected value, variance, probability distributions such as Normal and Poisson). Students should ensure that they are adequately prepared analytically for this module.

Optional Textbooks:

- Collier, David A., and James R. Evans. *OM*, 6th ed., Cengage Learning, 2017. ISBN-13: 978-1305664791 | ISBN-10: 1305664795
- Heizer, Jay, et al. *Operations Management: Sustainability and Supply Chain*, 13th ed., Pearson, 2020. ISBN-13: 978-1292295039 | ISBN-10: 1292295031

Assessment:

Tutorial Participation, Assignments, and Project	50%
Final Exam	50%

Academic Honesty & Plagiarism:

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is 'the practice of taking someone else's work or ideas and passing them off as one's own' (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - you have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. **In case of any doubts, you should consult your instructor.**

Additional guidance is available at:

<http://www.nus.edu.sg/registrar/adminpolicy/acceptance.html#NUSCodeofStudentConduct>

Online Module on Plagiarism:

<http://emodule.nus.edu.sg/ac/>