Course Outline

Course Code	: DAO2703A
Course Title	: Operations and Technology Management
Class Date	: From 12/8/2026 To 11/11/2026
Semester	: Semester 1, Academic Year AY2026/2027
Faculty	: Associate Professor Tam Trinh
Department	: Analytics & Operations
Email	: tamtrinh@nus.edu.sg
URL	: https://discovery.nus.edu.sg/22592-tam-trinh
Office Hours	: By appointment
Course Schedule	: Wednesdays, 12:00pm – 3:00pm
Meeting Venue	: BIZ2 05-10

Overview

This is an introductory BBA-level course that discusses the central role of effective Operations Management in driving organizational success. We introduce quantitative methods for analyzing operational models and qualitative frameworks for assessing their effectiveness. Examples of the former include: Process analysis, queuing models, and inventory management.

Operations refers to the collection of actions that a firm (or an organization) takes to channel its assets, resources, and capabilities into outputs of value. For most for-profit firms, this output can be a physical product, or a service, or both. From this definition alone, it is evident that a firm's operations are central to its identity, existence, and sustainability. Although not every manager will have direct control over a firm's operating processes, all managers are, invariably, indirect stakeholders in the operations of a firm, its subsidiaries, and/or its partners.

This course highlights the necessity for every manager, in any role, industry, and context, to be an effective operating manager, which we define as someone who is able to understand of the processes of a firm in order to assess its operations thoughtfully, identify root causes of operational failure or sub-optimality, and develop recommendations for impactful and sustainable improvement.

In comparison to the base version of the course DAO2703, this course will involve a substantially heavier focus on case-based classroom discussion. Consequently, active class participation and attendance are vital in this course: Students who enroll in this course must come prepared to engage their classmates in in-class discussion and debate.

In addition to case discussions, the course incorporates experiential and applied learning activities designed to help students connect operational concepts with real-world managerial decision-making. Selected class sessions may include operational simulations, process analysis exercises, service and supply chain design, and technology-enabled problem-solving activities. Students may also be exposed to emerging digital tools, including artificial intelligence, where appropriate, to support operational analysis and managerial decision-making.

Course Objectives

1. Quantitative methods for operational analysis, including: Process analysis, inventory management, queueing models.
2. Qualitative frameworks to assess operational effectiveness and alignment with strategic goals
3. Improved skill and confidence in engaging peers in case discussions and persuasion.

Teaching Approach

The course combines case-based learning with interactive and applied learning experiences. While case discussions remain the primary vehicle for exploring managerial decision-making, students may also participate in simulations, operational decision exercises, process analysis, and technology-enabled problem-solving activities.

Artificial intelligence tools may be incorporated into selected classroom activities to support forecasting, process redesign, quality management, service operations, and supply chain decision-making. Students will be encouraged to critically evaluate AI-generated recommendations and compare them with managerial judgment and established operational frameworks.

Pre-requisites

Although this class does not have a formal pre-requisite, for students who plan to take this course, I **strongly recommend** that you have familiarity with concepts of elementary probability at the level of DAO1704 or DAO1704X, including, but not limited to:

1. Defining and manipulating random variables,
2. The concepts of expectations, variance, distribution (cdf), and density (pdf), as applied to random variables, and
3. Performing computations on elementary probability distributions such as normal distributions, exponential distributions, and discrete distributions.

In addition, some exposure to the following topics would be helpful, but not necessary:

1. Elementary calculus, including the concept of an integral and a derivative,
2. Maximization or minimization of a (real-valued and differentiable) function using first-order conditions, and
3. Distinguishing between maxima and minima of a function using second-order conditions.

Assessment

Assessment Components	Weightage
Class participation	40%
Individual assignment	30%
Group assignment	25%
Peer Evaluation	5%

TENTATIVE Schedule (subject to change)

Introduction to Operations Management

Week 1	August 12, 2026	Benihana of Tokyo

Production Systems

Week 2	August 19, 2026	The Donner Company
Week 3	August 26, 2026	National Cranberry Collective

Service Operations

Week 4	September 2, 2026	University Hospitals Neurology Narayana Health
Week 5	September 9, 2026	Queueing Models
Week 6	September 16, 2026	Oberoi Tessei
Recess Week	September 23, 2026	*No Class*

Innovation Processes

Week 7	September 30, 2026	Innocentive IDEO

Inventory Management

Week 8	October 7, 2026	Economic Order Quantity
Week 9	October 14, 2026	Sport Obermeyer

Supply Chains

Week 10	October 21, 2026	Toyota Motor Manufacturing Barilla
Week 11	October 28, 2026	ITC eChoupal Crocs
Week 12	November 4, 2026	*No Class* *(INFORMS Annual Meeting)*
Week 13	November 11, 2026	Coca-Cola Vietnam

Optional Reading

1. Cachon, G. and Terwiesch, C., 2018. Matching supply with demand: An introduction to operations management, 4th Edition. Mcgraw-Hill.

Additional readings, articles, and case materials on contemporary topics such as digital transformation, artificial intelligence, service innovation, and supply chain resilience may be assigned throughout the semester.

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:

- Administrative Policies
- http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct
- http://nus.edu.sg/osa/resources/code-of-student-conduct