

DAO2703

Module Title: Operations and Technology Management
Semester: Semester 2, Academic Year 2022/2023
Instruction Duration: 09 Jan 2023 – 14 Apr 2023
Final Exam Date: TBD (Exam weeks: 22 Apr 2023 – 06 May 2023)
Instructors: Dr **Chen** Kim Heng (Module Coordinator)
Prof **Hum** Sin Hoon

MODULE DESCRIPTION

Operations and Technology Management (OTM) is a classic functional area of management that deals with the problems of production in all kinds of enterprises. It focuses on the productive system of the enterprise, which we define as the means by which resource inputs are transformed into useful outputs of goods and services.

While Operations and Technology Management is a traditional functional field, and while this module will follow an outline built around the traditional foundational topics of OTM, we will nevertheless attempt to highlight some of the more current issues that are relevant within these topics. In view of this, the module will consider issues pertaining to both manufacturing and services-oriented systems, highlight the strategic aspects of operations, evaluate the significance and implications of advanced process technologies like robotics, AI and flexible manufacturing systems, and explain the strategic significance of practices such as those of Japanese manufacturing techniques and philosophies like Just-in-Time and Total Quality Management, and those relating to the Theory of Constraints.

The primary objectives of the 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 and Technology Management, and to highlight the current relevance and strategic significance of the operations function in any given enterprise.

Basic Text

William J. Stevenson, Operations Management, 14th Edition, 2021, McGraw Hill.

Reference Text

F. Robert Jacobs and Richard B. Chase, Operations and Supply Chain Management, 16th Edition, 2021, McGraw Hill.

ASSESSMENTS

Component	Weightage
Class Participation	15%
Project Presentation	10%
Project Report	20%
Final Exam (Closed Book)	50%
Peer Evaluation	05%
Total	100%

Module Topics

Introduction & Process Fundamentals

1. Introduction to Operations Management
2. Operations Processes and Technologies
3. Operations Process Flow Analytics

Production Planning and Control Cycle

4. Aggregate Planning
5. Inventory Management I
6. Inventory Management II
7. Material Requirements Planning
8. Operations Scheduling

Improving Operations

9. Operations Paradigm I: Lean/Just-In-Time
10. Operations Paradigm II: Theory of Constraints

Strategic View of Operations

11. Strategic Operations
12. Supply Chain Management

A detailed Module Schedule and Contents (including Tutorials) will be made available closer to start of the Semester. Tutorial sheets containing questions for discussion and problems for practice will be made available for each tutorial.

Students are expected to come to lectures and tutorials prepared for the topic of the week by working on the Readings that will be indicated in the detailed Module Schedule and the Tutorial sheet for the week.