

# Service Engineering and Management

Tuesday, Thursday, 09:00 am – 10:20 am, Room 4579

**Instructor:** Bo Yang ([yangb@ust.hk](mailto:yangb@ust.hk))

## Course Description

Service operations management is crucial to improve productivity in engineering and business. Gaining a competitive advantage by managing the company's critical performance dimensions (e.g., quality, speed, flexibility, and cost) requires a thorough understanding of the underlying service processes, and of how operations contribute to productivity growth. This course introduces basic business processes and the quantitative tools needed to improve them. Being different from math or technique oriented courses, this course emphasizes more on the applied side. A tentative list of topics is:

- Process improvement
- Forecasting
- Capacity management
- Wait line management
- Investment planning

## Recommended Textbooks

These are only recommendations. The course will only loosely draw on the text. You do not have to buy these textbooks.

- *Service Management: Operations, Strategy, Information Technology*, by S. Bordoloi, J. Fitzsimmons and M. Fitzsimmons, The McGraw-Hill Companies
- *Operations and Supply Chain Management*, by F. R. Jacobs and R. Chase, The McGraw-Hill Companies
- *Performance modeling and design of computer systems: queueing theory in action*, by Harchol-Balter Mor, Cambridge University Press, 2013.

## Course Web Page

A web page will be available for this course on Canvas. You will need to access this web page for announcements about class, lecture notes, homework assignments and their solutions, and other materials. All the slides used in class will be posted on the web page before each lecture.

## Grading and Assignments

There will be 2 assignments (25% for each) and a final exam (50%) for this course. Students need to work individually on the homework assignments. You should upload a soft copy via Canvas by the date when the assignment is due. **Late submissions will NOT be accepted.**

## Class Participation

Please come to the class fully prepared. Please carefully review the previous classes, read the assigned materials, be ready and willing to actively engage in the classroom learning experience. This will ensure that you maximize your gain from the class. Regular attendance and participation in all classes will be helpful for the boundary case.

## Prerequisites

Students are expected to have the necessary prerequisite in basic probability (IEDA 2520 Probability for Engineers and IEDA 2540 Statistics for Engineers) and optimization (IEDA 3010 Prescriptive Analytics).

Knowledge in stochastic processes (IEDA 3250 Stochastic Models) and simulation (IEDA4130 System Simulation) would be very helpful, but not required.

## Policies

As a member of the HKUST community, you are expected to meet the highest standards of academic behavior. Please review the university statement on academic integrity. On homework assignments, high-level collaboration, like discussion on methods to solve homework problems, is permitted. However, sharing solutions or numerical answers is not allowed and is considered cheating. Sharing solutions or cheating on exams will result in a zero grade on that assignment or exam, and related university policies will be strictly enforced.