THE UNIVERSITY OF HONG KONG

FACULTY OF BUSINESS AND ECONOMICS

School of Business

BUSI0023AB Operations and Quality Management /

IIMT3635AB Operations Management

I. Information on Instructor

Instructor: Dr. Eric Park

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Consultation times: by appointment

TA: TBA

Email: TBA

Consultation times: by appointment

Course Page: MOODLE

Pre-requisites: Please refer to the Description for Undergraduate Courses

Textbook: Anupindi, R., S. Chopra, S. D. Deshmukh, J. A. Van Mieghem, and E. Zemel, *Managing Business Process Flow*, (3rd Edition, Pearson New International Edition)

Supplementary materials:
- "*Kristen's Cookie Co. (A)*," Harvard Business Case 608037-PDF-ENG.
- *"Introduction to the Theory and Practice of Yield Management,"* by Netessine and Shumsky, INFORMS Transactions on Education, 3(1), 2002, pp. 34-44.

II. Course Description and Objectives

■   Course Description:

Operations Management studies how firms actually produce products and services. Operations are concerned with the management of the processes that convert inputs into outputs. Effective operations management involves managing people, equipment, and other resources. In the typical business organization the majority of the costs and controllable assets are managed by the operations function. Thus, this discipline–with the techniques, procedures and knowledge it encompasses – is a vital segment of business activity.

It is becoming increasingly clear that a firm's competitive advantage lies in part in its ability to capture knowledge about how to do things in its processes. This course cover a set of techniques that were designed to help people understand operations processes and then improve processes

whether those processes are administrative, manufacturing, product design, or service processes. Although the origins of the techniques we will discuss in this course come from applications of engineering design and highly repetitive manufacturing processes we will see that their application is not limited to them.

■ Course Objectives:

By introducing rigorous methods and theories, this course demonstrates ways to apply structured thinking on loosely defined operations processes in reality. Upon successfully completing this course, you should be able to

1. employ the fundamental concepts in process analysis,
2. understand how to apply basic models and theories in business processes,
3. understand the basic concept of quality management and process improvement, and
4. apply a generic framework in improving business processes.

III. Learning Outcomes

In this class, you will develop and sharpen your skills to

ILO1. clearly identify and define a loosely structured operations process,

ILO2. use systematic approaches to assess operations and quality capability of a process,

ILO3. apply process improvement tools to redesign an operations process, and

ILO4. develop skills in designing and implementing an effective operations system.

IV. Alignment of Program and Course Outcomes

Program Learning Outcome	Course Learning Outcome
1. Acquisition and internalization of knowledge and skills in key functional areas	ILO1, ILO2, ILO3, ILO4
2. Application and integration of business knowledge	ILO1, ILO2, ILO3, ILO4
3. Inculcating professionalism and leadership	ILO1, ILO4
4. Developing global outlook	ILO1
5. Mastering communication skills	ILO3, ILO4

V. Teaching and Learning Activities

Lecture: Approximately 60% of the class time will be used for lecturing. I will present the fundamental concepts and the related business examples. However, I intend the lectures to be highly interactive to motivate active learning and continuous participation. You will learn the class topics by following the presentation as well as interjecting with your questions and response/comments to the questions I pose. A portion of class time will involve demonstrations of Excel exercise. You will build your Excel skills by following my demonstrations.

Skill-Building Exercise: To reinforce the class topics, I will provide in-class problems during the lecture. This is a chance to check your knowledge and practice approaching process analysis. Instead of providing the instructor's solution, students may be asked to demonstrate their work and explain their approach clearly to the class. The idea of these exercises is to allow you to immediately apply the models and theories presented in lectures to relevant business problems; and the interactive classroom environment invigorates the learning process. *Only the students who have submitted a name card may be awarded in-class participation points. Students who are able to present their solutions correctly and clearly* **may** *receive in-class participation points.*

Assignments, Practice Problems, and additional readings: Four to Five assignments will be assigned and answers will be given after the due time. The assignments include calculations questions that reinforce your skills, as well as *a case (cases)* that helps (help) your understanding of the idea. We will discuss the case (cases) in the next class after you submit the assignment. (If you never prepare a case discussion before, see the next page for how to prepare the case assignments.) Assignments are due on every TBA.

Practicing the problem-solving skills is essential for truly acquiring them. Practice problems will also be given every week. Although they will not be graded, these questions will be helpful for you to prepare your exams. In addition to the practice problems, there will be additional readings that help you understand the key business concepts.

Project: One group projects will be assigned. NO LATE project is allowed. You will complete it in self-selected groups of **four** to **five** people, and report to me your selected process for comments. Please form your project groups as soon as possible. If you have problems finding a group, please let me know. Collaboration is key to learning and doing well on this project. Group members can evaluate each other's performance by providing comments on the peer evaluation form. Those who under-contribute may be penalized (up to **100% grade deduction**).

Exams: Two exams will be given in class. No make-up exam will be given unless a legitimate reason is approved before the exam or a medical emergency (with medical certificate) is presented. The second exam will be comprehensive. **Exam 1 is scheduled on TBA, and Exam 2 is scheduled on TBA.**

VI. Assessment

Learning outcome	Teaching and learning activity	Assessment
1. Define and analyze unstructured processes	Skill-building exercises, projects	Assignments, exams, projects, in-class participation
2. Apply techniques/model for assessing processes	Practice questions and projects	Assignments, exams, in-class participation
3. Use improvement tools for redesigning process	Skill-building exercises, projects	Assignments and projects
4. Implement an effective operations system	Practice questions and projects	Assignments, exams, projects, in-class participation

VII. Standards for Assessment

Exams* (the first exam 25% and the second exam 40%)	**65%**
Assignments (4% for graded ones and 6% for non-graded ones)	**10%**
In-Class Participation	**10%**
Project (Write-up 10% and presentation 5%)	**15%**
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	100%

Note: * Make-up exams will NOT be given

Course Grade Descriptors	
A+, A, A-	● Demonstrate a strong understanding of all relevant knowledge ● Handling questions professionally ● High participation in discussions and volunteering answering/asking questions ● Present arguments that have an element of originality ● Achieve a standard of excellent performance in the exams with very accurate computation and very good analytical and problem solving skills ● Excellent writing report and presentation
B+, B, B-	● Demonstrate a good understanding of all relevant knowledge ● Handling questions in a logical way

	● Good participation in discussions ● Present arguments that go beyond the lecture and textbook ● Achieve a standard of good performance in the exams with accurate computation and good analytical and problem solving skills ● Good writing report and presentation
C+, C, C-	● Demonstrate a basic understanding of the concepts involved ● Fairly address questions as set ● Some participation in discussions ● Present arguments in a well-structure manner ● Meet a standard of acceptable performance in the exams with reasonably accurate computation and acceptable analytical and problem solving skills ● Acceptable writing report and presentation
D+, D	● Demonstrate a minimum understanding of the concepts involved ● Barely address questions as set ● Minimal or no participation in discussions ● Present arguments in a marginally acceptable manner ● Meet a standard of marginally acceptable performance in the exams with some errors in computation and barely adequate analytical and problem solving skills ● Marginally acceptable writing report and presentation
F	● Demonstrate a poor understanding of the concepts involved ● Unable or unwilling to handle questions ● Minimal or no participation in discussions ● Present arguments poorly ● Fail to meet a standard of passing the exams with major errors in computation and inadequate analytical and problem solving skills ● Poorly writing report and presentation
Assessment Rubrics for written group projects and exams:	
A+, A, A-	● Demonstrate a strong understanding of all relevant knowledge ● Present arguments that have an element of originality ● Achieve a standard of excellent performance in the assessments with very accurate computation and very good analytical and problem solving skills

	● Excellent writing report and presentation
B+, B, B-	● Demonstrate a good understanding of all relevant knowledge ● Present arguments that go beyond the lecture and textbook ● Achieve a standard of good performance in the assessments with accurate computation and good analytical and problem solving skills ● Good writing report and presentation
C+, C, C-	● Demonstrate a basic understanding of the concepts involved ● Present arguments in a well-structure manner ● Meet a standard of acceptable performance in the assessments with reasonably accurate computation and acceptable analytical and problem solving skills ● Acceptable writing report and presentation
D+, D	● Demonstrate a minimum understanding of the concepts involved ● Present arguments in a marginally acceptable manner ● Meet a standard of marginally acceptable performance in the assessments with some errors in computation and barely adequate analytical and problem solving skills ● Marginally acceptable writing report and presentation
F	● Demonstrate a poor understanding of the concepts involved ● Present arguments poorly ● Fail to meet a standard of passing the assessments with major errors in computation and inadequate analytical and problem solving skills ● Poorly writing report and presentation
Assessment Rubrics for in-class participation:	
A+, A, A-	● High participation in discussions ● Always attend in-class discussions ● Demonstrate a strong understanding of all relevant knowledge ● Handling questions professionally ● Present arguments that have an element of originality ● Respect others and follow the class rules (no chatting and do not use cell phone)

B+, B, B-	● Good participation in discussions ● Often attend the in-class discussions ● Demonstrate a good understanding of all relevant knowledge ● Handling questions in a logical way ● Present arguments that go beyond the lecture and textbook ● Respect others and follow the class rules (no chatting and do not use cell phone)
C+, C, C-	● Some participation in discussions ● Sometimes attend the in-class discussions ● Demonstrate a basic understanding of the concepts involved ● Fairly address questions as set ● Present arguments in a well-structure manner ● Respect others and follow the class rules (no chatting and do not use cell phone)
D+, D	● Minimal or no participation in discussions ● Rarely attend the in-class discussions ● Demonstrate a minimum understanding of the concepts involved ● Barely address questions as set ● Present arguments in a marginally acceptable manner ● Respect others and follow the class rules (no chatting and do not use cell phone)
F	● Minimal or no participation in discussions ● Almost never attend the tutorials and in-class discussions ● Demonstrate a poor understanding of the concepts involved ● Unable or unwilling to handle questions ● Present arguments poorly ● **Behave poorly in class (often chatting with others, using cell phones, or being late)**

VIII. Academic Conduct

An orderly learning environment is extremely important for this course. Disruptive behaviors are inconsiderate to other students as well as to the instructor, and are absolutely unacceptable. Talking during lectures, arriving to class late, and any other disruptions of mobile devices are not allowed; students who are responsible for any of these actions will be subject to academic penalty and will be asked to leave the classroom.

Any dishonesty—such as cheating, false representation, plagiarism, etc.—that comes to my attention will result in an F in the course.

Academic dishonesty includes cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Scholastic dishonesty also includes, but is not limited to, providing false or misleading information to receive a postponement or an extension on an exam or other assignment. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the Disciplinary Committee Regulations (http://www.hku.hk/pubunit/cal99/104f.htm). By teaching this course, I have agreed to observe all of the faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all of the student responsibilities described in that document. If the application of that policy statement to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

Tentative Course Schedule

Due dates and exam dates subject to change; please check Moodle for updated information.

Class day	Week	Topic
	1	Introduction Operations strategy and the process view of operations (Ch. 1, 2)
	2	Process analysis (Ch. 3, and 4) Capacity planning (Ch. 5) *Name card due: To be collected IN CLASS*
	3	Case: Kristin Cookie *Assignment 1: Kristin Cookie due*
	4	Holiday
	5	Impact of Variability (Ch. 4) and safety capacity (Ch. 8): Queueing models *Project group member list due on 05/10* *Assignment 2: Capacity Planning*
	6	Reading week
	7	Impact of Variability (Ch. 4) and safety capacity (Ch. 8): Queueing models Impact of Variability (Ch. 6) and safety capacity (Ch. 7): Inventory models *Assignment 3: Managing Variability: Queueing Models* ***Exam 1: TBA.***
	8	Impact of Variability (Ch. 6) and safety capacity (Ch. 7): Inventory models Managing Supply Chains
	9	Managing Supply Chains Revenue management (supplement paper) *Assignment 4: Managing Variability: Inventory Models*
	10	Revenue management (supplement paper) Quality management and statistical process control (Ch 9)
	11	Quality management and statistical process control (Ch 9) *Assignment 5: revenue management*
	12	Lean operations (Ch. 10) *Assignment 5: Statistical Process Control*
	13	Project presentation *Project report due* ***Exam 2: TBA.***

Project: Improve an Existing Process

This project involves a specific application of the class concepts to solve (or at least analyze) a business problem. First, find a process that you are interested, e.g., the queue at the Canteen, the walk-in process to see a doctor at the university clinic (UHS), the design of the HSBC bank at the HKU branch. Second, clearly identify the problem about the process, e.g., the long queueing time at the Canteen during the lunch hours, the doctor appointment system at UHS, confusing design within the HSBC bank at the HKU branch. Third, investigate potential solutions using the class concepts. You are encouraged to directly collect the data, e.g., by counting the processing time at the Canteen kitchen, and the arrival times of the students at the queues, and use the data in your analysis. If direct data collection is not available, then specify what kind of data do you need, and you can find aggregate data to approximate the parameters needed for providing potential solutions. Fourth, estimate the improvements your suggestions can lead to. Finally, discuss how you are going to implement your potential solutions. See Moodle for sample projects.

OM project report outline:

You are encouraged to follow the report outline when you present and submit your report:

1. Define the process: Supply, demand, the goal, bottlenecks, etc.

2. Identify the difficulties and provide suggestions: Select two to three reasons causing mismatching, and provide "feasible" operations strategies to improve the process.

3. Evaluate the suggestions: Every suggestion comes with pros and cons. Remember to discuss the financial, operational, and relationship-related impacts, and propose how to implement your suggestions to mitigate the negative impacts.

The report <u>must not exceed 10 single-sided pages</u> including all materials, with margin size of 2.54 cm (for top, bottom, left, and right margins), 12-point Times New Roman font, 1.5 line spacing. We will use the discussion board on Moodle for additional questions about the details of this project.

Detach the last page of this document and use it as the **cover page of your project with all members' signatures**. Those who do not sign will not receive a grade for this project.

OM project report grading criteria:

1. Pre-report discussion (1 point). You need to discuss with TA about the process that you would like to improve during week *TBA*. Ideally, each group studies a unique process.
2. Define the process (4 points).
3. Identify the difficulties and provide suggestions (5 points).
4. Evaluate the suggestions (5 points).

Academic Ethics Form

By signing this form, I confirm that I did not involve in any dishonest academic behavior (such as those discussed in the course syllabus) on this project, and understand that any academic misconduct will be penalized and may result in an F in the course.

Signature:_____   Name:_____

Signature:_____   Name:_____

Signature:_____   Name:_____

Signature:_____   Name:_____

Signature:_____   Name:_____