SCHOOL OF BUSINESS AND MANAGEMENT
HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

ISOM 4810: OM Best Practices

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Classes: 12:00 – 13:20, Mon. and Wed.
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Course Description

Operations Management (OM) deals with the production and delivery of goods and services. In this course, we shall study eight applications in OM, many of which have been judged by peers as being amongst the best in recent years. We shall together try to understand what the problem was, how it was addressed, how it worked out and attempt to learn what marked it as a success and how portable the practice can be. The principal purpose is to expose students to a wide range of good case histories in order to enhance their repertoire and experience in OM.

Most of the course materials are taken from January-February issues of the journal, *INFORMS Journal on Applied Analytics* (formerly, *Interfaces*). The January-February issues publish the six finalists of the Edelman competition, a prestigious competition running for over twenty years to select the best applications of the previous year. The cases used for the course have been selected to cover a wide range of types of problems, industries, and techniques. There is no required textbook.

Intended Learning Outcomes

At the end of this course, students should be able to:

1. Contrast and analyze some of the most important problems in OM in different industries;
2. Contrast and critique solutions that have been used in practices;
3. Identify and analyze similar problems in practice; Construct solutions and defend them.

This course will also provide students with the opportunities to develop their abilities to

4. Work effectively in a team and lead a team;
5. Work with other functions in making operations decisions;

6. Communicate effectively in oral and written English in assigned task contexts.

Cases

You will work in a team of 3-5 students. Each team should hand in a memo (2 to 3 pages, single space, and font 11 or 12) for each case (except the first and the seventh). Please upload your memos on Canvas before 6pm **on the day before** the case is discussed. In addition, each team will have the opportunity to give a presentation based on one case.

There will be some specific questions for each case provided by the instructor. Besides the specific questions, the following is a list of general questions that you can also discuss in your memos (optional). Not all the questions are equally relevant to all the cases, so feel free to place emphasis where appropriate.

1. What is the '*big picture'*, the general circumstances in which this problem has arisen?
2. In your own words, briefly describe the *specific* problem faced in this case.
3. What technical methodology was used to help the analysis? Can you explain in simple language how this methodology was used?
4. What were the data implications? (Was the data available? Did it have to be collected? Was it un/reliable? Was it sampled? Was there significant uncertainty involved? Was the data 'dirty'? Was the data numerical or descriptive? Etc.)
5. How were the results assessed? What constituted a successful outcome? Was this case successful?
6. What were the critical success factors in this project?
7. How portable do you think the results of the project are to other situations (This is an important question)?

Team Project

The objective of the project assignment is to put in practice what you have learned in the cases. Teams are expected to:

1. Select a simple operation of production and delivery of either goods or services. Examples include, but not limited to, a barber shop, a bank branch, a coffee shop, a book store, a restaurant, a clinic, a grocery store, worker scheduling for after-sales services (of air conditioners, washing machines, copiers, phone line or broadband, etc.), construction or renovation projects, delivery services (of newspaper, bottled water, pizza, etc.). Explain the process and identify areas for improvement;
2. Construct a stylized model that can be used to assist the improvement.
3. Collect some needed data or explain how you will go about getting the needed data.
4. Explain how the model will be implemented and its effectiveness assessed.

A one-page proposal is due on **April 7, 2021**. A written report is due right after the last class. The report should use font 12, and be single-spaced, printed double sided, and with standard margins. The report should be no longer than 20 pages. Each team will be given about 20 minutes to present its project in class the last week of the semester. You are encouraged to discuss your project with the instructor, especially in the stages of idea formulation and model development.

Participation

Class participation is critical for this course. You will be assessed by your contribution to in-class discussion. Class participation counts 10 points (or 10%). Examples of contributions include:

1. Gets key issues
2. Supports claims made
3. Provides practical experience
4. Opens new doors to investigate
5. Does thorough analysis
6. Asks perceptive question
7. Provides insights from previous cases

Assessment Scheme

Case memos: 36%
Class participation: 10%
Team project: 18%
Peer evaluation 10%
In class quiz (60 minutes, open book): 26%

Peer Scoring Rubric (10% of Case Memo and Team Project)

Each team member will assess all **other** team members using the following rubric. For each category, evaluate each team member and give a grade. All responses are confidential. **Each student must hand in this page by the end of the last class. Failure to do so will reduce your own peer evaluation score by 1 point.**

Student Evaluator and Team Name: _____

Team member (Name and Student No.)	Contribution	Quality of work	Working with others	Time management	Total

Comments_____

Category	2.5	2	1.5	0-1
Contribution	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite deader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.
Quality of work	Provides work of the highest quality	Provides high quality work.	Provides work that occasionally needs to be checked /redone by other group members to ensure quality.	Provides work that usually needs to be checked/redone by other group members to ensure quality.
Working with others	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Usually listens to, shares with, and supports the efforts of others. Does not cause "waves" in the group.	Often listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.
Time-management	Routinely uses time well throughout the project to ensure things get done on time. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Routinely uses time well throughout the project, but may have procrastinated on one thing. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Tends to procrastinate, but always gets things done by the deadlines. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Rarely get things done by the deadlines AND group has to adjust deadlines or work responsibilities because of this person's inadequate time management.

Scoring Rubric for Case Study

Content – applied to written report

	2.5	2	1.5	0-1
Identification of the main issues/problems	Identifies and understand all of the main issues in the case study	Identifies and understand most of the main issues in the case study	Identifies and understand some of the main issues in the case study	Identifies and understand few of the main issues in the case study
Analysis of the issues	Insightful and thorough analysis of all the issues	thorough analysis of most of the issues	Superficial analysis of some of the issues in the case	Incomplete analysis of the issues
Comments on effective solutions/strategies	Well documented, reasoned and pedagogically appropriate comments on solutions, or proposals for solutions, to all issues in the case study	Appropriate, well thought-out comments about solutions, or proposals for solutions, to most of the issues in the case study	Superficial and/or inappropriate solutions or comments to some of the issues in the case study	Little or no action suggested, and/or inappropriate solutions or comments to all of the issues in the case study
Links to course readings and additional research	Excellent research into the issues with clearly documented links to class (and/or outside) reading	Good research and documented links to the material read	Limited research and documented links to any reading	Incomplete research and links to any readings

Team Project Presentation Scoring Rubric

	2.5	2	1.5	0-1
Delivery and enthusiasm	Very clear and concise flow of idea. Demonstrates passionate interest in the topic and engagement with the class	Clear flow of ideas. Demonstrates interest in topic and engagement with the class	Most ideas flow but focus is lost at times. Limited evidence of interest in and engagement with the topic	Hard to follow the flow of ideas. Lack of enthusiasm and interest.
Visuals and staging	Visuals augmented and extended comprehension of the issues in unique ways. Uses stage, effects such as props, costumes, sound effects, in a unique and dramatic manner that enhances the understanding of the issues in the case study	Use of visuals related to the materials. Uses stage, effects such as props, costumes, sound effects, in a unique manner to extend understanding of the issues in the case study	Limited use of visuals loosely related to the materials. Limited use of stage effects, and/or used in a manner that did not enhance the understanding of the issues in the case study.	No use of visuals and stage effects.
Involvement of the class: questions, generating discussion, and activities	Excellent and salient discussion points that elucidated materials to develop deep understanding. Appropriate and imaginative activities used to extend understanding in a creative manner	Questions and discussion addressed important information that developed understanding. Appropriate activities used to clarify understanding.	Questions and discussion addressed surface features of the topic. Limited use of activities to clarify understanding.	Little or no attempt to engage the class in learning.
Response to class queries	Excellent response to student comments and discussion with appropriate content supported by theory/research	Good response to class questions and discussion with some connection made to theory/research.	Satisfactory response to class questions and discussion with limited reference to theory and research.	Limited response to questions and discussion with no reference to theory/research.

Team Project Scoring Rubric - Content

	Expert (30-35)	Practitioner (25-30)	Apprentice (20-25)	Novice (below 20)
Problem identification	The problem is well defined and explained. There is insightful and thorough analysis of all the key issues. If the problem is solved, the potential benefits can be very significant.	The problem is well defined and explained. There is thorough analysis of most of the key issues. If the problem is solved, the potential benefits can be significant.	The problem identified is interesting, but analysis is lacking and the focus needs to be sharpened.	It is not clear what the real problem is.
Model	The model is appropriate for the problem and it captures of the key issues of the problem. It is rigorous and yet not overly complicated.	The model is appropriate for the problem, but some fine-tuning is required.	The model is appropriate for the problem, but it required some major adjustment.	The model is not appropriate for the problem, or the model itself contains major errors.
Data	Excellent plans for collecting needed data.	Very concrete plans for collecting most of the needed data	More data is needed than recognized; plans are not well thought out and dada quality can be a problem	No or little clue about what data is needed and how it should be collected.
Implementation	Well thought out, Concrete and realistic plans for implementation. The team is also very specific on how the benefit will be measured.	A good plan for implementation.	There are some good points in the plans, but overall the plans are too vague. Some ideas are unrealistic. There are obvious challenges in implementation that the team is not prepared for.	Little or no clue about how the model should be implemented. Or implementation plans are total unrealistic and illogical.
References	Excellent research into the issues with clearly documented links to best practices in model, data, and implementation.	Good research and documented links to best practices.	Limited research and documented links to best practices.	Make little mention and appear to be unaware of what has been done in best practices.