



ISOM4810 OM Best Practices Spring 2024

Department of Information Systems, Business Statistics and
Operations Management

COURSE

ISOM4810 OM Best Practices (3-0-0:3)

Operations Management (OM) deals with the production and delivery of goods and services. Throughout this course, we will learn many important, practical, and relevant applications in OM through case studies. We shall together try to understand what the problem is, how it is addressed, and how it should work out. While investigating the root causes of the problem, we will explore existing industry best practices (if any) or identify possible solutions, in an attempt to learn what qualifies it a success and how portable (or transferable) this practice can be. Students will expose to a wide range of business case studies that enhance their understanding and problem-solving skills in OM. In addition, students will gain experience to identify different business/operational issues and explore solutions to address them by developing a case study with direct or published sources and information.

Spring 2024

Tuesday/Thursday: 12–1:20 pm, LSK-1007

INSTRUCTOR

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TEACHING ASSISTANT

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TEXTBOOK

All learning materials, including case studies, readings, and online references, will be available in Canvas.

GRADING POLICY

Final course grade will be determined by the following criteria and point distribution.

Participation and peer evaluation	20
Quizzes (best 4 out of 5)	20
Case analyses with questions included (best 2)	20
Group project: presentation	20
Group project: report and analysis	<u>20</u>
Total	100

Participation is determined primarily by your contribution to class discussions and the active use of Discussions in Canvas. It will be awarded at the end of the term according to the relevance, quality, and pattern of your overall contributions to class discussion. Peer evaluation may be required to determine individual contributions to the group project.

Each quiz needs to be completed in class on the date as indicated in the syllabus. There is no makeup quiz since we count only the best 4 out of the 5 scores.

Case analysis (with presentation slides) will be due one day before the case is discussed in class. There will be a total of two case submissions. If it is necessary (considering the class enrollment) to have more than two case submissions, only the best two will be counted. Cases will be assigned during week 3 after the drop/add period is over.

COURSE GOALS

This advanced OM course is designed in such a way to provide you an opportunity to:

1. Contrast and analyze some of the most important, practical, and relevant OM problems in different industries.
2. Contrast and critique solutions that have been used in practices.
3. Identify and analyze similar problems in practice.
4. Develop an actionable solution and defend its implementation.

**SPECIFIC
KNOWLEDGE
AND SKILLS
DEVELOPED**

By completing this course, you should be able to:

1. Work effectively in a team (of 3 to 5 students) and lead a team (a rotating role).
2. Work with other functions in making business and operations decisions.
3. Communicate effectively in presentations and written analyses.
4. Develop the necessary skills to write a business case study for future teaching and learning purposes.

**CASE
ANALYSES**

You will work in a group of 3 (4 if necessary and approved) and your group will be assigned to work on two cases and required to submit a case analysis (with presentation slides) at least one day before the case is discussed in class. While there is no page limit on your case analysis, you should keep it to no more two pages (excluding appendix). Along with your case analysis, you need to submit at least five (short answer) questions that can be used as quiz questions later in class.

You are expected to actively participate and contribute to (and possibly asked to lead) the class discussion for your assigned cases. Failure to do so will adversely affect your case analysis score. Each case will be discussed twice in class (not on the same day) and the group assigned for the subsequent discussion is expected to provide more insight than the first one. Each group will have the chance to do at least one time for the initial and subsequent discussions.

When analyzing a case, you should use the list of questions below as a guide. Note that not all questions are equally important or relevant to your assigned cases though.

1. What is the 'big picture,' the general circumstances in which this problem has arisen?
2. Briefly describe the specific problem faced in this case.
3. What technical methodology is used to help the analysis?
4. What are the implications from the data (if provided)?
5. How are the results assessed? What has constituted a successful outcome? Is the outcome of this case successful?
6. What are the critical success factors in solving this business problem?
7. How portable/applicable do you think the results are to other situations?

Please note that all written assignments will be checked by Turnitin for plagiarism. Penalty will be imposed for any submission with a high similarity score. To avoid receiving a high similarity score, please do not use extensively exact wordings in the case.

You can organize your analysis any way you think best. Make sure your analysis is concise (use of bullet points for the answers is allowed) and avoid repeating information already given in the case. A submission link is provided in Canvas for you to upload the analysis. Late assignment will not be accepted.

**GROUP
PROJECT**

Your group will decide on a topic to complete a business case study. The purpose of this group project is to allow you to put in practice what you learn throughout this course. To start with, your group needs to identify a company with an important, practical, and relevant problem. The company could be a local business, such as a restaurant, bank, supermarket, etc., a new start-up, or a globally known business.

A one-page project idea proposal, with standard format and margin (like this document), is due by week 7. You are encouraged to discuss your project idea with the instructor once your group is formed and has chosen a topic.

This course uses extensively business cases for learning. You will learn more about case teaching methods and case writing techniques during the second half of this course. We will help develop your skills in these areas so that you will appreciate more about using business cases for your lifelong learning and, at the same time, communicate more effectively and confidently in your future career.

**ACADEMIC
INTEGRITY**

Students at HKUST are expected to observe the Academic Honor Code at all times (<https://acadreg.ust.hk/generalreg.html> for more information). Zero tolerance is shown to those who are caught cheating on any form of assessment and a zero mark will be given. All written assignments will be screened by Turnitin for plagiarism and points will be deducted when the similarity index is considered high (e.g., more than 25%).

COURSE OUTLINE

	Topics
Week 1 February 1	Introduction <ul style="list-style-type: none"> • Why learning OM Best Practices? • How to get the most from this course? • Benchmarking vs. best practices Readings <ul style="list-style-type: none"> • Michael Hammer (2004), "How operational innovation can transform your company?" Harvard Business Review.
Week 2 February 6, 8	Learning with business case studies <ul style="list-style-type: none"> • From problem diagnosis to improvement • Adopting the right problem-solving approach Readings <ul style="list-style-type: none"> • Danica De Vera (2023), "Operational performance explained: Definition, importance, example, and challenges," Accountingprofessor.org • Michael Schrage et al (2023), "AI is helping companies redefine, not just improve, performance," MIT Sloan Management Review. • Ben Cohen (2023), "The astrophysicist who has a better way to board airplanes," Wall Street Journal. For class discussion <ul style="list-style-type: none"> • How to redesign the boarding process for airlines?
Week 3 February 15	Demo case <ul style="list-style-type: none"> • Ronald Kleer and Singfat Chu (2014), "GlaxoSmithKline: Rebalancing excessive workloads," Ivey Publishing.
Week 4 February 20, 22	Case discussion <ul style="list-style-type: none"> • Jasmina Bogojeska et al., (2021), "IBM predictive analytics reduces server downtime," INFORMS Journal on Applied Analytics. • Yuming Deng et al., (2023), "Alibaba realizes millions in cost savings through integrated demand forecasting, inventory management, price optimization, and product recommendations," INFORMS Journal on Applied Analytics.
Week 5 February 27, 29 <i>Quiz #1</i>	Case discussion <ul style="list-style-type: none"> • Julien Guillen et al., (2019), "Europcar integrates forecasting, simulation, and optimization techniques in a capacity and revenue management system," INFORMS Journal on Applied Analytics. • John Heiney et al., (2021), "Intel realizes \$25 billion by applying advanced analytics from product architecture design through supply chain planning," INFORMS Journal on Applied Analytics.
Week 6 March 5, 7 <i>Quiz #2</i>	Case discussion <ul style="list-style-type: none"> • Koen Peters et al., (2022), "UN food programme: Toward zero hunger with analytics," INFORMS Journal on Applied Analytics. • Peiling Wu-Smith et al., (2023), "General Motors optimizes vehicle content for customer value and profitability," INFORMS Journal on Applied Analytics

<p>Week 7 March 12, 14 <i>Quiz #3</i></p>	<p>Case discussion</p> <ul style="list-style-type: none"> • Jiaxi Liu et al. (2023), "AI vs. human buyers: A study of Alibaba's inventory replenishment system," INFORMS Journal on Applied Analytics. • Xiaojia Guo et al. (2020), "London Heathrow Airport uses real-time analytics for improving operations," INFORMS Journal on Applied Analytics.
<p>Week 8 March 19, 21 <i>Quiz #4</i></p>	<p>Case discussion</p> <ul style="list-style-type: none"> • Biao Yuan et al. (2023), "Cainiao optimizes the fulfillment routes of parcels," INFORMS Journal on Applied Analytics. • Sadan Kulturel-Konak et al. (2022), "Menu engineering for continuing care senior living facilities with captive dining patrons," INFORMS Journal on Applied Analytics.
<p>Week 9 March 26 <i>Quiz #5</i></p>	<p>Group meeting</p> <ul style="list-style-type: none"> • Finalize the outline of the case study • Get started with the group project
<p>March 28 to April 6</p>	<p>Mid-term break</p>
<p>Week 10 April 9, 11</p>	<p>Developing a business case study</p> <ul style="list-style-type: none"> • How to write an interesting business case and use it effectively? • For reference, https://libguides.hull.ac.uk/other/cases <p>Proposed case project presentation</p> <ul style="list-style-type: none"> • Make a 5-minute presentation in class to introduce the case study
<p>Week 11 April 16, 18</p>	<p>Group meeting</p> <ul style="list-style-type: none"> • Finish the draft (sufficiently polished) of the case study • Meeting with the instructor • Feedback and revision on the case study project • Work on the case study presentation <p>Group meeting (only if the presentation schedule allows)</p> <ul style="list-style-type: none"> • Finalize the case study presentation
<p>Week 12 April 23, 25</p>	<p>Group project presentation</p>
<p>Week 13 April 30, May 2</p>	<p>Group project presentation</p>
<p>Week 14 May 7, 9 <i>Written case and analysis due May 16</i></p>	<p>Group project presentation</p> <p>Group meeting (only if the presentation schedule allows)</p> <ul style="list-style-type: none"> • Finalize the case study report using the feedback from the presentation

APPENDIX 1

PEER EVALUATION

Evaluated by: _____

Evaluation criteria (max 20 points each criterion for a total of 100 points)

Criteria	Significantly below expectation (0-13 points)	Below expectation (14-15 points)	Meet expectation (16-17 points)	Exceed expectation (18-19 points)	Significantly exceed expectation (20 points)
Participation	Miss several team meetings without prior notice; do not participate effectively in team discussion of project issues	Miss one meeting without prior notice; or missed several team meetings with prior notice; participated in team discussions when asked	Miss no more than one team meeting with prior notice and proactively contribute to the team dialogue in most meetings	Attend all team meetings and often is a significant contributor to the team discussions	... plus are proactive in helping the team solve problems outside of meetings / assigned tasks, e.g., lead informal meetings to resolve team issues
Reliability	Work is usually incomplete and/ or late	Deliver most assigned work products on time and address assigned scope adequately in most cases	Deliver all assigned work products on time and consistently address assigned scope fully and appropriately	Consistently complete assignments early and/or often address additional scope beyond assigned	... and, in so doing, add value beyond assignment
Initiative and Sense of Responsibility	Wait until due date to bring up issues with assignment; are often not prepared for meetings	Reach out to other team members at last minute so there is not enough time to fix before due date; sometimes are not prepared for meetings	Verify scope of assigned work; when having difficulty with assigned work, is proactive to reach out to other team members with sufficient time to receive help; usually are prepared	Sought feedback on progress periodically throughout assignment to ensure that he/she was on target and is always prepared	Consistently take initiative to resolve issues through consultation with others, keeping everyone in the loop
Work quality	Work frequently contains mistakes, or is poorly communicated or without supporting backup evidence	Assign work is largely error free, but not always well communicated or with weak supporting rationale and backup	Assigned work is largely error free, clearly communicated verbally and graphically with adequate supporting backup materials	Work consistently error-free, well communicated verbally and graphically, with strong backup materials	... plus evidence of significant ingenuity or creativity or insight for the benefit of the team
Overall contribution to project success	Have almost no contribution	Have little contribution	Have some contribution	Have more contribution	Have significant contribution

Please evaluate each team members including *yourself* according to the five criteria as shown above. Your evaluation on your own performance is for reference only. Please refer to the rubrics for description. While using the individual rubrics are optional, you must enter the **total score** in the space below using the following ranges to reflect the overall performance: 96-100 (exceptional team player or leader); 90-95 (very good team player); 80-89 (good team player); 70- 79 (acceptable team player); 69 or below (weak and not effective team player).

Name of Student	Participation	Reliability	Initiative	Work Quality	Contribution	Total Score

APPENDIX 2

ASSESSMENT RUBRICS FOR WRITTEN ASSIGNMENT

Evaluation criteria (20 points each for each criterion for a total of 100 points)

Scoring rubrics	Well exceed expectation (19-20)	Exceed expectation (17-18)	Meet expectation (12-16)	Below expectation (0-11)	Score
Identification of the main issues and/or problems	Identify and understand completely all the main issues and problems	Identify and understand most of the main issues and problems	Identify and understand some of the main issues and problems	Identify and understand only few of the main issues and problems	
Quality of questions and research	Ask extremely clear, concise, and relevant questions and perform extensive research on the main issues	Ask very clear, concise, and relevant questions and perform good research on the main issues	Ask clear, concise, and relevant questions and perform just adequate research on the main issues	Fail to ask clear, concise, relevant questions and perform inadequate research on the main issues	
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	Incomplete analysis of the issues	
Comments on effective solutions or business practices	Well identified, reasoned and appropriate comments or proposal on solutions to all issues	Appropriate, well thought-out comments on solutions or proposal for solutions to most issues	Superficial and/or inappropriate solutions to some of the issues	Little or no action suggested, and/or inappropriate solutions to the issues	
Use of language	Free of any grammatical or spelling error; good choice of words	A few grammatical or spelling errors; should have better choice of words	Some grammatical or spelling errors	Lots of grammatical or spelling errors	
<p>Total: Use the following ranges to reflect the overall performance. 96-100 (exceptional report writing and extremely effective); 90-95 (very good report writing and very effective); 80-89 (good and effective); 70-79 (acceptable and somewhat effective); 69 or below (weak and not effective).</p>					

APPENDIX 3

ASSESSMENT RUBRICS FOR PRESENTATION

Evaluation criteria (max 20 points each criterion for a total of 100 points)

Subject matter: Interesting, relevant topic; well researched materials; clear purpose with a thoughtful conclusion	
Contents: Main points are well organized/developed; informative and accurate content; have a clear focus; clear introduction and conclusions; insightful/practical implications	
Visual effects: Visual aids / slides are creative; clear and easy to read and understand; enhance the effectiveness of the presentation; free of obvious misspellings or typos	
Presentation skills: Professional; comfortable and confident; good verbal and non-verbal communication; flow and pace is consistently appropriate; good command of language; appropriate voice volume and tone	
Audience control: Maintain good eye contact; enthusiastic; use the unexpected to full advantage; hold the audience's attention throughout; finish within the allotted time	
Total: Use the following ranges to reflect the overall performance. 96-100 (exceptional presentation and extremely effective); 90-95 (very good presentation and very effective); 80-89 (good and effective); 70-79 (acceptable and somewhat effective); 69 or below (weak and not effective).	

Assessment rubric

	Exemplary	Above expectation	Meet expectation	Below expectation	Not acceptable
Points	19-20	17-18	15-16	13-14	0-12

Adjustment for individual student's presentation performance

Student	Performance / Comments