



## ISOM4780 Integrated Planning and Execution Spring 2020

Department of Information Systems, Business Statistics &  
Operations Management

### COURSE

This course will use an integrated simulation game as a major learning tool to illustrate how strategic and operational decisions should be made in a competitive business environment. Students will learn to integrate and align key decisions in different business functions to simultaneously achieve a set of defined performance objectives of a company by evaluating decision alternatives and tradeoffs as well as optimizing the resource utilization.

#### Spring 2020

Time: 3:00-5:50pm

Venue: LSK-1003

### INSTRUCTOR

Prof. Ronald S. Lau (rlau@ust.hk)

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Office hours: By appointment

### TEACHING ASSISTANT

Athena Chau (imachau@ust.hk)

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### TEXTBOOK

No required textbook; learning materials will be posted on Canvas.

### GRADING POLICY

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

Quizzes (with top-up option*)	10
Pre-game planning and practices	10
Group competition games and review/analysis**	30
Group case presentation	10
Final exam	<u>40</u>
Total	100

\* You may opt to contribute two newly created questions (either MC or short answer format) to the question pool for replacing up to one wrong answer submitted in the prior week, subject to quality evaluation and acceptance.

\*\* Post game review/analysis (individual work) is required for every member of the team with the worst performance. Further points will be deducted if the review/analysis is deemed to be less than satisfactory.

### LEARNING OBJECTIVES

By the end of the course, students should be able to:

1. Relate the business strategy and execution for a company in a competitive market
2. Monitor and evaluate the business results with proper performance measurement models and metrics, such as AHP, DEA, and SCOR etc.
3. Identify the strategic decisions to achieve higher returns and market dominance
4. Explain a broad spectrum of business concepts and business functions
5. Demonstrate how to run a business profitably through a simulation game
6. Explore and identify the cause and effect relationship between the drivers and business performance

**ACADEMIC  
INTEGRITY**

Students at HKUST are expected to observe the Academic Honor Code at all time (see <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. In particular, any act of cheating on exam will automatically result in an F grade for this course.

**COURSE  
OUTLINE**

<b>Week 1</b> February 17	Reserved for Fall term's exam (no class today)
<b>Week 2</b> February 24	<b>Competitive strategy</b> <ul style="list-style-type: none"><li>■ Integration of business strategy and functional strategies</li><li>■ Concepts of integrated planning and execution</li></ul> <b>Benchmarking supply chain performance</b> <ul style="list-style-type: none"><li>■ Drivers for supply chain key performance indicators (KPI)</li><li>■ Supply chain operational reference (SCOR) model</li></ul>
<b>Week 3</b> March 2	<b>Business performance measurement models</b> <ul style="list-style-type: none"><li>■ Selection of performance criteria using analytic hierarchy process (AHP)</li><li>■ Benchmarking performance using data envelopment analysis (DEA)</li></ul> <b>Learning MonsoonSIM</b> <ul style="list-style-type: none"><li>■ Basic modules, performance criteria, and analytics</li></ul>
<b>Week 4</b> March 9	<b>Finance</b> <ul style="list-style-type: none"><li>■ Financial impact of strategic decisions and business transactions</li><li>■ DuPont model of financial analysis</li><li>■ Baseline and advanced accounting concepts, key financial reports, cash flow, cost of funds, integration with other modules</li></ul> <b>Accounting</b> <ul style="list-style-type: none"><li>■ Simulation scenario: Accrual accounting, delinquent notice, loan, etc.</li></ul>
<b>Week 5</b> March 16	<b>Retail and procurement</b> <ul style="list-style-type: none"><li>■ Retail sales concepts: Replenishment, storage capacity, rental management, price elasticity, market demand, integration with marketing, finance, and logistics</li><li>■ Procurement concepts: Purchase requisition, purchase order, PO tracking, approval, integration with MRP and finance</li><li>■ Simulation scenario: Introduction to retail business</li></ul> <b>Marketing</b> <ul style="list-style-type: none"><li>■ Marketing concepts: market survey, marketing ROI, effects of marketing on sales, integration with finance and sales</li><li>■ Simulation scenario: Impact of marketing on sales</li></ul>

<p><b>Week 6</b> March 23</p>	<p><b>Forecast, warehouse, and logistics</b></p> <ul style="list-style-type: none"> <li>■ Forecasting/planning concepts: Retail forecast, wholesale forecast, currency forecast</li> <li>■ Warehouse/logistics concepts: Storage capacity, replenishment, shipping lead time, integration with production and logistics</li> <li>■ Simulation scenario: Use of forecasts to determine optimal stock level and the impact of holidays on the retail business</li> <li>■ Simulation scenario: Warehouse management to minimize inventory costs and the impact of bulk buying in the business</li> </ul>
<p><b>Week 7</b> March 30</p>	<p><b>B2B and e-commerce</b></p> <ul style="list-style-type: none"> <li>■ E-commerce concepts: Online marketplace and e-procurement, escrow account, refunds, manual allocation, and quality control, order fulfillment, impact of bad reputation on business</li> <li>■ Simulation scenario: Online wholesale business with holiday consideration</li> <li>■ Simulation scenario: Online wholesale business with production</li> </ul>
<p><b>Week 8</b> April 6</p>	<p><b>Managing a retail business with price elasticity</b></p> <ul style="list-style-type: none"> <li>■ Simulation scenario: Impact of price sensitivity on the pricing decision</li> <li>■ Simulation scenario: Retail business with rental management</li> </ul> <p><b>Competition game #1: Multiple modules</b></p> <ul style="list-style-type: none"> <li>■ Game review and lessons learned</li> </ul>
<p><b>Week 9</b> April 13</p>	<p>Public holiday (no class)</p>
<p><b>Week 10</b> April 20</p>	<p><b>Production, MRP, and maintenance</b></p> <ul style="list-style-type: none"> <li>■ Production concepts: Production capacity, capital expenditure, amortization, asset disposals, integration with maintenance, MRP, finance, and HR</li> <li>■ MRP concepts: MRP calculations, product priority, buffer stock, integration with procurement, planning, warehouse, and logistics</li> <li>■ Maintenance concepts: Overall equipment efficiency, periodic and preventive maintenance, integration with finance and HR</li> <li>■ Simulation scenario: Asset breakdown and overhaul</li> <li>■ Simulation scenario: Production planning and control strategies using the MRP logic</li> </ul>
<p><b>Week 11</b> April 27</p>	<p><b>Advanced production planning and control</b></p> <ul style="list-style-type: none"> <li>■ Simulation scenario: Production planning and control strategies</li> </ul> <p><b>Competition game #2: Multiple modules</b></p> <ul style="list-style-type: none"> <li>■ Game review and lessons learned</li> </ul>

<p><b>Week 12</b> May 4</p>	<p><b>HR and service</b></p> <ul style="list-style-type: none"> <li>■ HR concepts: Turnover, headcount cost, counseling, recruitment, the big five personality factors, integration with finance, service, and maintenance</li> <li>■ Customer service concepts: request for quotation, bidding, scheduling manpower, integration with finance and HR</li> <li>■ Simulation scenario: Impact of effective human resource management on business success</li> <li>■ Simulation scenario: Manpower scheduling</li> </ul>
<p><b>Week 13A</b> May 11</p>	<p><b>Managing an e-commerce business</b></p> <ul style="list-style-type: none"> <li>■ Simulation scenario: Retail, wholesale, production, maintenance, HR, and customer service</li> </ul> <p><b>Competition game #3: Multiple modules</b></p> <ul style="list-style-type: none"> <li>■ Game review and lessons learned</li> </ul>
<p><b>Week 13B</b> May 18</p>	<p><b>Case study presentations</b></p> <ul style="list-style-type: none"> <li>■ Cathay Pacific: Implementing a turnaround plan</li> <li>■ Huawei: Formulating a new global competitive strategy</li> <li>■ Wal-Mart: Digital transformation strategy</li> <li>■ Li &amp; Fung: How to make a trading business relevant?</li> <li>■ SF Express: An operational model to support rapid growth of business</li> <li>■ You choice of company, subject to instructor's approval</li> </ul>