



ISOM4740 Enterprise Resource Management Fall 2025

Department of Information Systems, Business Statistics and
Operations Management

COURSE

ISOM4740 Enterprise Resource Management (3-0-0:3)

This course introduces the basic concepts and practices of enterprise resource management. Popular enterprise resource planning software packages are used for discussing and building integrated business solutions.

Monday and Wednesday, 10:30-11:50 am, LSK-1005

This course will use a blended learning approach and you should review those lecture videos before/after class if needed. Class attendance and participation are expected for the best learning experience.

INSTRUCTOR

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TEXTBOOK

The instructor's text book, *Enterprise Systems for Digital Transformation*, is available for your reference and further study. Other learning materials will be posted in Canvas.

GRADING POLICY

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

PRS quizzes (best 4 out of 5)	20
Case analyses (2)	10
Lab exercises (3)	20
Final exam	<u>50</u>
Total	100

Grade	Description
A	Excellent performance: Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.
B	Good performance: Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.
C	Satisfactory performance: Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	Marginal pass: Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.
F	Fail: Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.

Each PRS 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. You can top up your PRS quiz score with participation (max 5 points), which is determined primarily by your contribution to class discussions and/or the active use of Discussions in Canvas. The top up points will be awarded at the end of the term according to the relevance, quality, and pattern of your contributions. The maximum total points for the quizzes plus top-up participation will be 20 points for the entire term.

Case analysis will be due before class on the date the case is discussed in class. There will be two case submissions for a total of 15 points. Format of the case analysis and the discussion questions can be found in the syllabus. No late assignment will be accepted unless it is accompanied by a valid excuse such as medical emergency.

Please refer to the detailed instructions to complete the three lab exercises. Lab exercise 1 covers basic SAP applications of SD, MM and PP. Lab exercise 2 will give you an opportunity to apply what you have learned from the prior lab exercises in an integrated process scenario using SAP. For lab exercise 3, you will use the SAP reporting and analytical tools and Excel pivot tables for data analysis and decision making. You need to submit your work for all lab exercises by the due time as specified in the syllabus using the submission links in Canvas. No late assignment will be accepted unless it is accompanied by a valid excuse such as medical emergency.

Final exam consists of short answer questions, quantitative problems, and critical thinking questions. Use of SAP is not needed during the exam. A study guide will be provided by the last day of class to help you prepare for the exam.

COURSE GOALS*

1. Compare the strategic values and limitations of enterprise systems. (PILO-1)
2. Discuss the basic concepts and practices of process-oriented management in a global, competitive environment. (PILO-3)
3. Define the skills and knowledge to successfully implement an enterprise system in organizations. (PILO-4)
4. Identify the new development of ERP software and applications for facilitating e-business. (PILO-7)
5. Demonstrate examples of business process integration through the use of ERP core applications and modules. (PILO-3, 7)
6. Identify the tangible benefits of enterprise integration for decision making using ERP analytic tools and Excel. (PILO-3, 7)

** Course goals are stated with matching PILO of the BBA-OM program.*

SPECIFIC KNOWLEDGE AND SKILLS DEVELOPED

By completing this course, you should be able to:

1. Describe the information systems evolution and its impacts on the development of ERP systems in global businesses as well as local small businesses.
2. Differentiate a business process from a business function.
3. Identify the kinds of data and information that each major functional area produces and needs.
4. Describe the benefits and limitations of system integration.
5. Compare and contrast different ERP architectures (including three-tier, web-based, and service oriented).
6. Explain why ERP system implementations often incorporate process redesign and industry best practices.
7. Construct a process flow diagram for major business processes.
8. Compare and contrast different enterprise system implementation strategies and processes.
9. Determine and analyze the total cost of ownership and vendor selection based on financial criteria such as net present value (NPV) and internal rate of return (IRR).
10. Describe how open source, SOA and SaaS will impact the future development of enterprise systems.
11. Describe the major functions and benefits of customer relationship management (CRM) and supply chain management (SCM) software, as an extension of ERP software.
12. Solve a material requirements planning (MRP) problem by determining the timing and quantity requirements for each material.
13. Perform proficiently an integrated business process involving sales and distribution, production planning and control, purchasing, warehouse management, and financial transactions using the ERP system.
14. Define the security, ethical, and legal issues related to ERP systems and their implementation.
15. Use basic reporting and analytical tools to analyze multidimensional data.

**COURSE AI
POLICY:**

You are prohibited from using generative AI (such as ChatGPT) to produce materials or content related to all assessment tasks such as case analysis and exam.

**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. In particular, any act of cheating on exam will automatically result in an F grade for this course. 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

	Conceptual / Managerial Topics	ERP Applications
Week 1 September 1, 3	Introduction <ul style="list-style-type: none">■ Integrated business solutions■ ERP markets and development Technology Enablers <ul style="list-style-type: none">■ Systems integration■ Enterprise system architectures■ Relational database	
Week 2 September 8, 10	Managing Business Process Change <ul style="list-style-type: none">■ Business process reengineering■ Modeling and automating business processes Diagnosis of Business Process Problems <ul style="list-style-type: none">■ Business process reengineering at ABC Inc.	
Week 3 September 15*, 17 <i>*PRS quiz #1</i>	Case Discussion <ul style="list-style-type: none">■ Cathay Pacific: Implementing an integrated e-freight solution	Introduction to SAP <ul style="list-style-type: none">■ SAP basic navigations■ GBI dataset for SAP lab exercises
Week 4 September 22, 24	Contemporary Issues and Latest Development <ul style="list-style-type: none">■ Open source ERP, SOA, and SaaS■ Integration with SCM and CRM	Learning SAP-FI <ul style="list-style-type: none">■ For practice: FI
Week 5 September 29* <i>*PRS quiz #2</i>	Customer Relationship Management <ul style="list-style-type: none">■ Types of CRM systems■ Applications in marketing, sales, services	

Week 6 October 6, 8	Supply Chain Management <ul style="list-style-type: none"> ■ SAP APO and IBP ■ Applications in DP, SNP, PP/DS, ATP, TP/VS 	Learning SAP-SD <ul style="list-style-type: none"> ■ Lab exercise 1A: SD
Week 7 October 13*, 15 <i>*PRS quiz #3</i>	Case Discussion <ul style="list-style-type: none"> ■ Lenovo: Digital transformation for supply chain intelligence <i>Case analysis due before class</i>	Learning SAP-MM, PP <ul style="list-style-type: none"> ■ Lab exercise 1B: MM ■ Lab exercise 1C: PP
Week 8 October 20, 22	Integrated Business Process <ul style="list-style-type: none"> ■ Worksheet approach to MRP <i>Lab exercises 1A to 1C due by Monday</i>	Integrated Business Process <ul style="list-style-type: none"> ■ Lab exercise 2A: Master data
Week 9 October 27* <i>*PRS quiz #4</i>	Enterprise Systems Implementation <ul style="list-style-type: none"> ■ ERP implementation methodology ■ System selection and evaluation 	
Week 10 November 3, 5	Case Discussion <ul style="list-style-type: none"> ■ Bloom & Grow Asia (I): ERP strategy and planning <i>Case analysis due before class</i>	Integrated Business Process <ul style="list-style-type: none"> ■ Lab exercise 2B: Make-to-stock scenario
Week 11 November 10*, 12 <i>*PRS quiz #5</i>	Case Discussion <ul style="list-style-type: none"> ■ Bloom & Grow Asia (II): ERP selection 	Integrated Business Process <ul style="list-style-type: none"> ■ Lab exercise 2C: Review
Week 12 November 17, 19	Business Analytics <ul style="list-style-type: none"> ■ Types of business analytics ■ Analytics framework and technology ■ In-memory analytics <i>Lab exercises 2A to 2C due by Monday</i>	SAP Reporting and Analytical Tools <ul style="list-style-type: none"> ■ Lab exercise 3A: Reports and analyses in SAP ERP
Week 13 November 24, 26	Excel's Pivot Table <ul style="list-style-type: none"> ■ Extracting transactional data from SAP ERP 	Excel's Pivot Table <ul style="list-style-type: none"> ■ Lab exercise 3B: Excel's pivot table <i>Lab exercises 3A to 3B due by Friday</i>

WRITTEN ASSIGNMENTS

General information:

While there is no page limit for the case analysis, it should be about two pages long, single spaced between lines but double spaced between paragraphs. *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 copy and paste the case assignment questions or extensive use of exact wordings in the case.

For facilitating your case analysis, a list of suggested questions are given (below) but you don't need to follow them exactly. You can organize your answer any way you think best. Make sure your analysis is concise (use of bullet points for the answers is allowed) and avoids repeating information that already given in the case. A submission link is provided in Canvas for you to upload the analysis. Late assignment will not be accepted unless it is accompanied by a valid (e.g., medical) excuse.

Cathay Pacific: Implementing an integrated e-freight solution

For class discussion only

- (a) How crucial was an integrated process and information sharing to Cathay Pacific's cargo operations?
- (b) What were the major roles of Cathay Pacific in introducing the e-freight process? How to overcome the challenges when implementing it?
- (c) Describe how Cathay Pacific's ultimate success in its air cargo business depended on an alignment of people, process, and technology.

Assignment 1. Lenovo: Digital transformation for supply chain intelligence

Due before class

- (a) How did the COVID-19 pandemic disrupt Lenovo's global supply chain?
- (b) How could digital transformation help Lenovo achieve its higher performance targets even in the face of global supply chain disruptions?
- (c) What organizational and technical challenges should Lenovo focus on and overcome for a successful implementation of the SCI framework across its supply chain?

Assignment 2. Bloom & Grow Asia (I): ERP strategy and planning

Due before class

- (a) For Bloom & Grow Asia, what specific reasons were presented to justify the first ERP implementation project (NetSuite)? Did these reasons warrant an ERP implementation project?
- (b) What prompted the consideration of a second ERP implementation (xTuple)? Should Bloom & Grow Asia upgrade its existing xTuple system or replace it with a new one?
- (c) What recommendations would you give Peter Deacon as he was pondering what to do next? What were the major lessons he should have learned in the previous two implementations?

Grading Criteria and Rubrics for Case Analysis

Evaluation summary (max 20 points for each criterion for a total of 100 points). *For reference only, as not all case questions will require all evaluation criteria below.*

Scoring rubrics	Well exceed expectation (19 – 20)	Exceed expectation (17 – 18)	Meet expectation (15 – 16)	Below expectation (0 – 14)
Identification of the main issues and/or problems	Identify and understand completely 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
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 documented, identified, reasoned and appropriate comments/proposal on solutions to all issues	Appropriate, well thought out comments on solutions/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
Make use of other relevant course learning materials	Apply extensively concepts learned in class or from other relevant learning materials	Apply some concepts learned in class or from other relevant learning materials	Apply a very limited amount of concepts learned in class or from other relevant learning materials	No application at all of any concepts learned in class or from other relevant learning materials
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	Many grammatical or spelling errors
Total: Use the following ranges to reflect the overall performance. 95-100 (exceptional report writing and extremely effective); 90-94 (very good report writing and very effective); 80-89 (good and effective); 70-79 (acceptable and somewhat effective); below 70 (weak and not effective).				