



ISOM4740 Enterprise Resource Management Fall 2024

**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.

Fall 2024

Class meeting: WF, 3 to 4:20 pm, 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

Prof. Ronald Lau (rlau@ust.hk)

Office: LSK-4081

Phone: 2358-8348

TEACHING ASSISTANT

Ryan Yang (imryang@ust.hk)

Office: LSK-4065

Phone: 2358-8543

TEXTBOOK

The instructor's text book, *Enterprise Systems for Digital Transformation*, is available in Canvas 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 | 10 |
| Lab exercises | 20 |
| Final exam | <u>50</u> |
| Total | 100 |

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 also 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 a total of 2 case submissions of 5 points each. Format of the case analysis and the discussion questions can be found in the syllabus.

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 in an integrated process scenario. You will use the SAP reporting and analytical tools and Excel pivot tables to complete lab exercise 3 for decision making.

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 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.

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 4, 6 | 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 | |
| Day 2 September 11, 13 | 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 20 | Case Discussion <ul style="list-style-type: none"> ■ Cathay Pacific (B): Implementing an integrated e-freight solution | |
| Week 4 September 25*, 27 <i>*PRS quiz 1</i> | Introduction to SAP <ul style="list-style-type: none"> ■ SAP basic navigations ■ GBI dataset for SAP lab exercises | Learning SAP <ul style="list-style-type: none"> ■ For practice: FI |
| Week 5 October 2, 4 | Contemporary Issues and Latest Development <ul style="list-style-type: none"> ■ Open source ERP, SOA, and SaaS ■ Integration with SCM and CRM | Learning SAP-SD <ul style="list-style-type: none"> ■ Lab exercise 1A: SD |
| Week 6 October 9* <i>*PRS quiz 2</i> | Customer Relationship Management <ul style="list-style-type: none"> ■ Types of CRM systems ■ Applications in marketing, sales, services | |
| Week 7 October 16, 18 | Supply Chain Management <ul style="list-style-type: none"> ■ SAP APO and IBP ■ Applications in DP, SNP, PP/DS, ATP, TP/VS | Learning SAP-MM, PP <ul style="list-style-type: none"> ■ Lab exercise 1B: MM ■ Lab exercise 1C: PP |
| Week 8 October 23*, 25# <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> | <i>#Lab exercises 1A to 1C due by today</i> Integrated Business Process <ul style="list-style-type: none"> ■ Worksheet approach to MRP |
| Week 9 October 30, November 1 | Enterprise Systems Implementation <ul style="list-style-type: none"> ■ ERP implementation methodology ■ System selection and evaluation | Integrated Business Process <ul style="list-style-type: none"> ■ Lab exercise 2A: Master data |

| | | |
|--|---|--|
| <p>Week 10 November 6*, 8</p> <p><i>*PRS quiz 4</i></p> | <p>Case Discussion</p> <ul style="list-style-type: none"> ■ Bloom & Grow Asia (I): ERP strategy and planning <p><i>*Case analysis due before class</i></p> | <p>Integrated Business Process</p> <ul style="list-style-type: none"> ■ Lab exercise 2B: Make-to-stock scenario |
| <p>Day 11 November 13, 15</p> | <p>Case Discussion</p> <ul style="list-style-type: none"> ■ Bloom & Grow Asia (II): ERP selection | <p>Integrated Business Process</p> <ul style="list-style-type: none"> ■ Lab exercise 2C: Review |
| <p>Day 12 November 20*, 22#</p> <p><i>*PRS quiz 5</i></p> | <p>Business Analytics</p> <ul style="list-style-type: none"> ■ Types of business analytics ■ Analytics framework and technology ■ In-memory analytics | <p><i>#Lab exercises 2A to 2C due by today</i></p> <p>SAP Reporting and Analytical Tools</p> <ul style="list-style-type: none"> ■ Lab exercise 3A: Reports and analyses in SAP ERP |
| <p>Day 13 November 27, 29#</p> | <p>Excel's Pivot Table</p> <ul style="list-style-type: none"> ■ Extracting transactional data from SAP ERP ■ Basic pivot table applications | <p>Excel's Pivot Table</p> <ul style="list-style-type: none"> ■ Lab exercise 3B: Excel's pivot table <p><i>#Lab exercises 3A to 3B due by today</i></p> |

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.

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 (A): 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 |
| <p>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).</p> | | | | |