ISOM4740 Enterprise Resource Management
Fall 2021

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 2021 Wednesday, 1:30–4:20 pm This course will use a blended learning approach and you should review those lectures before/after class if needed. Class attendance is expected.
INSTRUCTOR	Prof. Ronald S. Lau (rlau@ust.hk) Office: LSK-4081 Phone: 2358-8348
TEACHING ASSISTANT	Angel So (imso@ust.hk) Office: LSK-4049C Phone: 2358-5728
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.

Online quizzes / Participation	10
Case analyses	10
Lab exercises	20
Group project	20
Final exam	40
Total	100

Each online quiz needs to be completed by 23:59, Saturday of the week as indicated in the syllabus. There will be a total of 5 quizzes of 2 points each. You can top up your online quiz score with participation, which is determined primarily by your contribution to class discussions and 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 these 5 quizzes plus top-up participation will be 10 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. Format of the case analysis and the discussion questions can be found in the syllabus.

Please refer to the detailed instructions to complete the lab exercises. Lab exercise 1 covers basic SAP applications of SD, MM and PP. Lab exercises 2 and 3 will give you an opportunity to apply what you have learned in an integrated manner. You will use the SAP reporting and analytical tools and Excel pivot tables to complete lab exercises 4 and 5 for decision making.

For the group project, you may form groups of 5 or less on your own. The project provides you an opportunity of exploring more in-depth knowledge of a specific topic relevant to any applications or technologies of enterprise systems. You are expected to extend what you learn in this course and not merely repeat what we already cover.

Your presentation (about 10-15 minutes) will be recorded in video and uploaded to Canvas for viewing and evaluation by your instructor, TA, and fellow students.

Final exam consists of short answer questions and a few problems. Use of SAP is not needed during the exam. A study guide will be provided by the end of the course 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 assignment 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

Week 1 September 1	**Introduction** ■ Integrated business solutions ■ ERP markets and development **Technology Enablers** ■ Systems integration ■ Enterprise system architectures ■ Relational database
Week 2 September 8	**Contemporary Issues and Latest Development** ■ Open source ERP, SOA, and SaaS ■ Integration with SCM and CRM **Diagnosis of Business Process Problems** ■ Business process reengineering at ABC Inc.
Week 3 September 15 *Case analysis due today before class* *Online quiz #1 due by 23:59, Saturday*	**Managing Business Process Change** ■ Business process reengineering ■ Modeling and automating business processes **Case Discussion** ■ Cathay Pacific (B): Implementing an integrated e-freight solution
Week 4 September 22	**Public holiday (no class)**
Week 5 September 29 *Online quiz #2 due by 23:59, Saturday*	**Introduction to SAP** ■ SAP basic navigations ■ GBI dataset for homework assignments **Learning SAP-FI** ■ For practice: FI
Week 6 October 6	**Learning SAP-SD, MM, PP** ■ Lab exercise #1: SD, MM, PP
Week 7 October 13 *Lab exercise #1 due before class* *Online quiz #3 due by 23:59, Saturday*	**Integrated Business Process – 1** ■ Worksheet approach to MRP ■ Lab exercise #2: Master data

Week 8 October 20 *Lab exercise #2 due before class*	**Integrated Business Process – 2** ■ Lab exercise #3: Make-to-stock scenario
Week 9 October 27 *Lab exercise #3 due before class* *Online quiz #4 due by 23:59, Saturday*	**Supply Chain Management** ■ SAP APO and IBP ■ Applications: DP, SNP, PP/DS, ATP, TP/VS **Customer relationship management** ■ Types of CRM systems ■ Applications: Marketing, sales, services
Week 10 November 3 *Case analysis due today before class*	**Enterprise Systems Implementation** ■ ERP implementation methodology ■ System selection and evaluation **Case Discussion** ■ Bloom & Grow Asia (A): ERP strategy and planning
Week 11 November 10 *Online quiz #5 due by 23:59, Saturday*	**Case Discussion** ■ Bloom & Grow Asia (B): ERP selection **SAP Reporting and Analytical Tools** ■ Lab exercise #4: Reports and analyses in SAP ERP
Week 12 November 17 *Lab exercise #4 due before class*	**Business Analytics** ■ Types of business analytics ■ Analytics framework and technology, in-memory analytics **Excel's Pivot Table** ■ Extracting transactional data from SAP ERP ■ Lab exercise #5: Excel's pivot table
Week 13 November 24 *Lab exercise #5 due before class*	**Group project**
	Final Exam (to be announced)

WRITTEN ASSIGNMENTS

General information:

While here is no page limit for the case analysis, it should be one to 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 each case, a list of suggested questions is 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. Cathay Pacific (B): Implementing an integrated e-freight solution
Due before class

(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 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 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?

GROUP PROJECT

The group project is to be completed by group effort and consists of a video presentation (about 10-15 minutes). The topic of the group project should focus on the managerial and/or technical aspects of enterprise systems. Some suggested topics are shown below. Your group can propose other topics, pending on the instructor's approval. Make sure you provide proper citations and bibliography of other published work at the end of your presentation slides for reference.

Your video presentation needs to be submitted to Canvas by the last day of fall term, with your group number for easy identification. Late submission of your project is subject to a penalty of 20% for every one day late. Your video presentation will be available in Canvas during the study break for viewing and evaluation by your instructor, TA, and fellow students. Each group will be assigned to evaluate at least two other presentations by a consensus assessment.

Suggested topics:

1. Specific ERP concepts and issues
   - Implementation project management
   - Cloud vs on-premise ERP
   - Industry applications
   - Change management
   - Benchmarking of performance (by brand or product, etc.)

2. Specific CRM and SCM concepts and issues
   - Integration with ERP: challenges and opportunities
   - Case studies (success and failure)
   - Market trend and development
   - Benchmarking of performance (by brand or product, etc.)

3. Impacts of evolving technologies on enterprise system applications
   - Digital transformation
   - Cloud computing and next-gen enterprise systems
   - Blockchain, AI, big data, analytics, IoT, etc.

4. Technical and managerial issues
   - System integration challenges (e.g., security)
   - Open source and cloud-based systems (e.g., SaaS and IT outsourcing)
   - System architecture (e.g., SOA)
   - Database architecture and design
   - In-memory analytics

5. Your own topic subject to approval

Group Project Presentation: Grading Criteria and Rubrics

Group:

Topic:

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 in communicating the ideas); 90-95 (very good presentation and very effective); 80-89 (good and effective presentation); 70-79 (acceptable and somewhat effective presentation); 69 or below (weak and not effective presentation).	