



# ISOM 364 Enterprise Resource Management Winter 2010

Department of Information Systems, Business Statistics, and  
Operations Management

## COURSE:

ISOM 364 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, such as SAP R/3, are used for discussing and building integrated business solutions.

### Winter 2010

Time: 10:00 – 12:20 p.m. Monday to Friday

Venue: Room 4116 (Microsoft .NET Lab, Lift 19)

Course web: <http://teaching.ust.hk/~isom364>

## INSTRUCTOR:

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## TEACHING ASSISTANT:

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## TEXTBOOK:

*Enterprise Systems for Management (2009) by Motiwalla and  
Thompson (Pearson, 2009)*

## GRADING POLICY:

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

	<u>Plan-A</u>	<u>Plan-B</u>
Class attendance*	10%	10%
Participation	10%	10%
Group project	20%	-
ERP lab assignments	20%	20%
Final exam	<u>40%</u>	<u>60%</u>
Total**	100%	100%

\* Any absence beyond the two allowable absences will result in a 2 percentage point penalty (Lateness 1 percentage point each time).

\*\* Course grade is determined by the maximum of Plans A and B.

## COURSE GOALS:

(with matching PILO)

1. Compare the strategic values and limitations of enterprise systems (PILO-1,7).
2. Discuss the basic concepts and practices of process-oriented management in a global, competitive environment (PILO-3).
3. Demonstrate examples of business process integration through the use of SAP R/3 core applications and modules (PILO-3,7).
4. Define the skills and knowledge to successfully implement an enterprise system in organizations (PILO-4).
5. Identify the new development of ERP software and applications for facilitating e-business (PILO-7).
6. Become an effective team leader or member by participating in a group project and presentation (PILO-2,5).

## COURSE INTENDED LEARNING OUTCOMES

By completing this course, you should be able to:

1. Describe the information systems evolution and its impacts on the development of enterprise resource planning (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. Describe and compare different ERP architectures (including three-tier, web-based, and service oriented).
6. Explain why ERP systems are often implemented to include 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. List the major functions of financial and management accounting systems.
11. Explain accounting and management reporting benefits that accrue from having an enterprise-wide information system such as ERP.
12. Construct a sales and distribution process diagram and show its data flow and participants from the ERP system perspective.
13. Perform proficiently a sales order transaction from sales order processing to order fulfillment to financial settlement using the ERP system.
14. Construct a procurement and inventory management process diagram and show its data flow and participants from the ERP system perspective.
15. Perform proficiently a purchase order transaction from purchase order processing to goods receipt to financial settlement using the ERP system.
16. Construct a production planning and control process diagram and show its data flow and participants from the ERP system perspective.
17. Solve a material requirements planning (MRP) problem by determining the timing and quantity requirements for each material.
18. Perform proficiently an integrated business process involving sales and distribution, production planning and control, purchasing, warehouse management, and financial transaction using the ERP system.
19. Define the security, ethical, and legal issues related to ERP systems and their implementation.
20. Describe the major functions and benefits of customer relationship management (CRM) and supply chain management (SCM) software, as an extension of ERP software.
21. Design an ERP exercise for a major business process with a reference to the SAP's IDES instructions and training database.
22. Collaborate with other group members in developing ideas and completing the group project.
23. Construct a professional report and make a presentation in class.
24. Use online learning materials to continue practicing the skills in using SAP R/3 system.

## TEACHING APPROACH

This basic teaching approach for this course includes lectures, discussion of relevant issues, and hands-on exercises of using the ERP systems. A total of five computer assignments are designed to help you develop the skills in using major application modules of the SAP R/3 (and Microsoft Dynamics AX systems, pending on the class time remains). An optional group project is designed to further enhance your understanding of the major ERP topics and to deepen your working knowledge in using an ERP system.

## COURSE OUTLINE

<b>Day 1</b> <b>January 4</b>	<b>Introduction (Chapter 1)</b> <ul style="list-style-type: none"><li>■ IT/IS in perspective</li><li>■ Integrated business solutions</li><li>■ ERP markets and latest development</li></ul>
<b>Day 2</b> <b>January 5</b>	<b>Infrastructure and Technology Issues (Chapters 2 to 3)</b> <ul style="list-style-type: none"><li>■ From functional silos to systems integration</li><li>■ ERP's role in systems integration</li><li>■ Types of ERP architectures</li><li>■ Key enterprise system components</li><li>■ Data management with relational database</li></ul>
<b>Day 3</b> <b>January 6</b>	<b>Managing Business Process Change (Chapter 9)</b> <ul style="list-style-type: none"><li>■ Business process reengineering</li><li>■ Modeling and automating business processes</li></ul>
<b>Day 4</b> <b>January 7</b>	<b>Strategic Impacts of Enterprise Systems Implementation (Chapters 4 to 8)</b> <ul style="list-style-type: none"><li>■ ERP implementation strategy and methodology</li><li>■ System selection and evaluation</li><li>■ Managing ERP implementation projects</li></ul>
<b>Day 5</b> <b>January 8</b>	<b>Contemporary Issues of Enterprise Systems (Chapters 11 and 12)</b> <ul style="list-style-type: none"><li>■ Extended ERP applications</li><li>■ Technical and managerial issues of enterprise integration</li></ul>
<b>Day 6</b> <b>January 11</b>	<b>Learning SAP R/3</b> <ul style="list-style-type: none"><li>■ Basic SAP R/3 navigations</li></ul>
<b>Day 7</b> <b>January 12</b>	<b>Financial Accounting Applications (SAP-FI)</b> <ul style="list-style-type: none"><li>■ Basic accounting concepts and applications</li></ul>

<b>Day 8</b> <b>January 13</b>	<b>Sales and Distribution Applications (SAP-SD)</b> <ul style="list-style-type: none"> <li>■ Sales order management process</li> <li>■ Sales and distribution functionalities</li> <li>■ Lab assignment #1</li> </ul>
<b>Day 9</b> <b>January 14</b>	<b>Materials Management Applications (SAP-MM)</b> <ul style="list-style-type: none"> <li>■ Purchasing process and applications</li> <li>■ Functions and tools for managing inventory</li> <li>■ Lab assignment #2</li> </ul>
<b>Day 10</b> <b>January 15</b>	<b>Production Planning Applications (SAP-PP)</b> <ul style="list-style-type: none"> <li>■ Production planning and management applications</li> </ul>
<b>Day 11</b> <b>January 18</b>	<b>Integrated Business Process – I</b> <ul style="list-style-type: none"> <li>■ Create and maintain master data</li> <li>■ Worksheet approach to understanding MRP problems</li> <li>■ Lab assignment #3</li> </ul>
<b>Day 12</b> <b>January 19</b>	<b>Integrated Business Process – II</b> <ul style="list-style-type: none"> <li>■ Complete an integrated business process (make-to-stock) using major SAP application modules</li> </ul> <b>Integrated Business Process – III</b> <ul style="list-style-type: none"> <li>■ Complete an integrated business process (make-to-order) using major SAP application modules</li> </ul>
<b>Day 13</b> <b>January 20</b>	<b>Human Resources Management</b> <ul style="list-style-type: none"> <li>■ Lab assignment #4</li> </ul>
<b>Day 14</b> <b>January 21</b>	<b>Business Analytics</b> <ul style="list-style-type: none"> <li>■ Reporting and analysis</li> </ul>
<b>Day 15</b> <b>January 22</b>	<b>System Administration (Chapter 10)</b> <ul style="list-style-type: none"> <li>■ System security and administration</li> </ul>
<b>Day 16</b> <b>January 25</b>	<b>Special Topics</b> <ul style="list-style-type: none"> <li>■ Learning Microsoft Dynamics AX</li> <li>■ Lab assignment #5</li> </ul>
<b>Day 17</b> <b>January 26</b>	<b>Final Exam</b>

## GROUP PROJECT

If a group project is chosen as part of your class performance assessment, you need to complete one of the following two project choices and make a presentation in class.

- Choice 1: Create an exercise using the IDES examples and master data.
- Choice 2: Write a term paper on ERP related topics.

The group size should be 3 to 5 and the group representative needs to notify the instructor in writing by January 15 with an outline (indicating the title and list of names) of the project for approval. The completed project (including the presentation file, document file, or any reference materials) needs to be submitted by January 25 and in a way described in details below. Late submission of your project will not be accepted.

### **Choice 1: IDES exercise**

This project will reinforce your knowledge of the SAP system by using the IDES as a learning tool. You also acquire the necessary continuous learning skill in tackling new SAP applications beyond those learned in class. Your goal is to use this exercise to teach someone else about this particular application. You do not necessarily (unless you really want to) create your own new applications because the IDES has already provided necessary master data and covered numerous major business processes. What you need to do is to understand and then rewrite the IDES demo materials (using only company code 3000 or 1000) in a way that is useful for training purpose. If you need to change the original IDES master data, you should create your own set by copying it first. Your IDES exercise (written and presentation) should contain three parts:

- Brief description about the business process involved
- A process diagram
- Instructions similar to the formats found in the SAP lab assignments (Hint: SAP icons can be copied from web site such as [http://www.sapdesignguild.org/resources/icons\\_sap/index.htm](http://www.sapdesignguild.org/resources/icons_sap/index.htm)).

#### *Example*

- Process recurring payment (e.g., monthly rental payment): On the left pane of the IDES menu, choose *Financials > Financial accounting > General ledger accounting > Cash journal > Entering cash receipts* for details.
- Adjust the physical inventory level to match the accounting record: On the left pane of the IDES menu, choose *Logistics > Materials management > Physical inventory* for details.

There are a number of web sites that can provide further assistance in using different modules of SAP, including: <http://sapdocs.info/> and <http://www.sap-img.com/>.

### **Choice 2: Term paper on ERP topics**

The term paper should be about 10 to 20 pages long, single spaced between lines but double spaced between paragraphs (like this document), on interesting or emerging topics related to the study of enterprise resource management (see some suggested topics below). A good source for your paper's idea is the topic or subtopic in any of the chapters in the book but you are free to propose other topics for the instructor's approval. Make sure you provide proper citations and bibliography of other published work to avoid plagiarism.

#### *Suggested topics*

- New or existing technologies that influence the development and integration of future enterprise systems
  - Latest development of the enabling technologies and architectures (e.g., SOA)
  - RFID, XML, Web services, wireless technology, etc.
  - Process management and work flow systems
  - Extended enterprise applications: SCM, SRM, CRM, data mining, etc.

- Market structure, trend, and outlook
  - Enterprise systems for small and medium size companies
  - Emerging technologies and business
  - Impact of the SaaS model on ERP markets
  - Security and ethical issues
  
- Enterprise system implementation
  - Develop a list of selection criteria and scoring method for evaluating ERP software and their vendors' support
  - Find a successful (or unsuccessful) case of ERP implementation. What factors contributed to the success (or failure) of the implementation?
  - Write a local case on enterprise system implementation based on actual events
  
- Managerial issues and organizational impacts
  - Cultural effects on the implementation and execution of enterprise systems
  - Change management issues in the adoption of enterprise systems
  - Relationship between enterprise systems and competitive advantages

**Intra-group evaluation**

Since the group project is optional for this course, it is not necessary to evaluate each group member's performance. However, as a safe measure to ensure all group members contribute evenly to the completion of the group project, an intra-group evaluation will be carried out on the request of the group majority. See the following sample.

Name of Evaluator: \_\_\_\_\_

*Instructions:*  
 Write the names of each member in your group, including yourself (for reference only), in the boxes in the first column. Using the key that follows, circle the number that represents your opinion on your and other group member's performance on each item.

Scale:  
 3=Outstanding  
 2=More than satisfactory  
 1=Satisfactory  
 0=Less than satisfactory

Group Members (Listed by name)	Worked cooperatively to complete assignments	Attended and participated in meetings	Supported and respected other members' efforts and opinions	Prepared adequately for meetings	Made substantial contributions to group's understandings - shared ideas, resources, information
	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3

Additional Comments: