Production Information System

Course description

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Course description

- The course covers the fundamental aspects of computer technology essential for systems that manage data and information in manufacturing.

- It emphasizes the design and analysis of production information systems, focusing on their effectiveness, efficiency, and success factors in industry applications.

- Students will learn to model, organize, and manipulate data, develop spreadsheet applications, relational databases, and web-based database applications, along with an understanding of ERP software and decision support systems.

Course Objectives

This course is designed to present engineering students the major concepts and techniques of information systems that are needed in the management of manufacturing systems.

The main course objectives are :

1. Understand the role, instances, components, and development life cycles, of the information systems (IS) in industrial and service organizations.

2. Acquire the ability to model, design and implement relational database.

3. Acquire the ability to model the functions, logical architecture and data flows of IS.

4. Acquire the ability to model and design the User interface.

5. Acquire the ability to model and design Object-oriented IS.

Learning Outcomes

Upon completing the course, the student should be able to :

- Define what is the meaning of IS development
- Explain life cycles, and tools, with special focus placed on Production IS (PIS)
- Use the student acquainted with information system (IS) development concept
- Explain the ERP (Enterprise Resource Planning) software and decision support systems
- Build the development and role of e-business as IS for the supply chain
- Formulate design and implement relational database
- Select develop and communicate industrial information systems models.

Learning Resources

Required Textbooks

Design of Industrial Information Systems, Thomas Boucher & Ali Yalcin, Academic Presss Elsevier, 2006.

Essential References Materials

Modern Systems Analysis and Design, Jeffrey Hoffer, Joey Goerge & Joseph Valacich, Pearson Education International, Upper saddle river, fourth edition, 2011.

Electronic Materials

- The Blackboard system,
- Microsoft Access
- Microsoft Visio...

Course content

No	List of Topics	Contact Hours
1	Introduction to IS development	10
2	Database modeling and design	20
3	Structured analysis and functional architecture design	10
4	Object-oriented analysis and design (UML)	15
5	Informational architecture and logical design	10

No	List of Topics	Contact Hours
6	E-business and web-enabled database	10
Total		**75**

Tools to use : - Blackboard - Microsoft Access - Microsoft Visio

Teaching strategies : - Lecture - Case studies Small group - Lab demonstrations

Assessment methods: - Homework - Group report - Quiz - Oral presentation and discussion - Lab report - Midterm - Final Exam

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Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	Week 4-11	20%
2	Assignments(Homework, Lab and Analytical reports)	Weekly	10%
3	Midterm Exam	Week 8	20%
4	Group Mini Project Report and Oral Presentation	Week 15	10%
5	Final Exam	Week 16	40%