Title (Units): **COMP7350 Enterprise Information Systems Development (3,3,0)**

Course Aims: To cover practical development methodologies for Enterprise Information Systems (EISs), such as prototyping, extreme programming, and agile methods and to extend the students' experience on system development life cycle. Development related topics such as software deployment, security, configurations and maintenance will be covered. Functionalities of enterprise information systems offer to business strategies are also covered.

Prerequisite: Postgraduate Student Standing

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Explain major components in architectures of EISs
2	Analyze alternative development strategies
	Professional Skill
3	Apply agile software development skills
4	Execute software security and maintenance strategies
5	Implement some components of EIS
	Attitude
6	Be able to work effectively in a team

Calendar Description: This course provides an in-depth knowledge of development of enterprise information systems (EISs). Topics include alternative development strategies, agile development, software maintenance and functionalities of EISs.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-5	Students will learn development of enterprise information systems via lectures, tutorials, and assignments.
3-5	Students will practice development methods in labs.
3,5-6	Students will work on a project to gain hands-on experience.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Continuous Assessment	50%	1-6	Continuous assessments are designed to measure how well the students have learned the techniques in developing, securing, and maintaining components in an enterprise information system. Students are required to implement mini projects in group. Graded assignments on development methods are given.
2	Examination	50%	1-5	Final examination questions are designed to see how far students have achieved their intended learning outcomes. Questions will primarily be analysis and skills based to assess the students' ability in developing, securing and maintaining an enterprise information systems.

Assessment Rubrics:

	Excellent (A)	Good (B)	Satisfactory (C)	Fail (F)
EIS Architecture	Evidence of a thorough understanding of major components of EIS and implementation strategies	Evidence of a good understanding of major components of EIS and implementation strategies	Evidence of some understanding of some major components of EIS and implementation strategies	Fail to show evidence of some understanding of major components of EIS and implementation strategies
Agile methods	Can design and implement simple components of EIS with XP, UML and design patterns with a high effectiveness	Can design and implement simple components of EIS with most of XP, UML and design patterns with a good effectiveness	Can design and implement simple components of EIS with most of XP, UML and design patterns with a moderate effectiveness	Cannot design and implement simple components of EIS with most of XP, UML and design patterns
Security and Maintenance Management	• Can describe and explain thoroughly security and maintenance management • Can demonstrate an evidence of operating EIS security and maintenance	• Can describe security and maintenance management • Can demonstrate an evidence of operating EIS security and maintenance with a considerable effectiveness	• Can describe security and maintenance management • Can demonstrate an evidence of operating EIS security and maintenance with some effectiveness	• Cannot describe security and maintenance management • Cannot operate EIS security and maintenance
Functions of EIS	Demonstrate a thorough understanding of functions of EIS	Demonstrate a good understanding of functions of EIS	Demonstrate a sufficient understanding of functions of EIS	Cannot demonstrate a understanding of functions of EIS

Course Content and CILOs Mapping:

Content		CILO No.
I	Developing an EIS Architecture	1,2,6
II	Agile Software Development Methodology	3,5,6
III	Security and Maintenance Management	4,5,6
IV	Functionalities of Enterprise Information Systems	1,6
V	Performance Evaluation of Enterprise Information Systems	1,6

References:

- Jim Highsmith. Agile Software Development Ecosystems. Addison-Wesley. 2002.
- Robert. C. Martin. Agile Software Development, Principles, Patterns, and Practices. Pearson Education. 2013.
- James Schiel. Enterprise-scale Agile Software Development. Boca Raton: CRC Press, 2010.
- James Shore and Chromatic. The Art of Agile Development. O′ Reilly 2007.
- Scott A. Bernard. An Introduction to Enterprise Architecture. 3rd Edition, AuthorHouse, 2012.
- Alain April and Alain Abran. Software Maintenance Management: Evaluation and Continuous Improvement. Wiley-IEEE Computer Society. 2008.
- William R. Simpson. Enterprise Level Security: Securing Information Systems in an Uncertain World, Auerbach Publications, 2016.

Course Content:

Topic

I. Developing an EIS Architecture
   A. Implementation strategies
   B. Architecture components and artifacts
   C. Development of architecture views

II. Agile Software Development Methodology
   A. Agile Analysis
   B. Launching Scrum Teams
   C. Backlog Management
   D. Agile Development Tools

III. Security and Maintenance Management
   A. Enterprise level security management
   B. Software deployment and configuration management
   C. Software maintenance

IV. Functionalities of Enterprise Information Systems

V. Performance Evaluation of Enterprise Information Systems