Course Name: Information Systems Development Methodologies
Course Code: IS453

I. Basic Course Information

Major or minor element of program: Major
Department offering the course: Information Systems Department

Academic level: 400 Level
Semester in which course is offered: First (Fall) Semester
Course pre-requisite(s): IS351 Analysis and Design of Information Systems - 1
And IS352 Analysis and Design of Information Systems - 2

Credit Hours: 3
Contact Hours Through:

Lecture	Tutorial *	Practical *	Total
2.5	0.0	1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: September 2014

II. Overall Aims of Course

1. To familiarize the student with role of information systems methodologies, their history and the needs that precipitated them.
2. To familiarize the student with the meanings of the various terms typically referred to when developing information systems such as method, methodology, tool, technique, tool and life cycle model.
3. To develop the student's analytical and critical abilities in evaluating, comparing and selecting appropriate methodological tools and life cycle models.
4. To give the student the grounding upon which he or she can further develop abilities in configuring particular methodological tool sets suitable for particular Information System development situations.

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
K2,K9,K21,K23	I8,I9,I11,I12	P9,P15,P20	G2,G4,G6

IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

On completing the course, students should be able to:

K.1 Explain the meanings of the terms Method, Methodoloogy, Tool, Technique and Life Cycle Model, and the difference etween them.

K.2 Learn the rationale for selecting and using information systems development methodologies.The main varieties of modeling perspectives and the role that each serves in modeling information systems.

K.3 Illustrate the various paradigms underlying information systems development methodologies.

K.4 Learn the main characteristics of a number of salient IS development methods.

b. Intellectual/Cognitive Skills

On completing the course, students should be able to:

I.1 Conduct contextual analyses for contemplated information systems.

I.2 Devise suitable evaluation and selection frameworks for Information Systems Development Methodologies.

I.3 Develop problem-specific arguments for adopting particular methodologies.

I.4 Learn the ability to analyse the essential merits of new methodological and process offerings in the area of information systems development.

c. Practical/Professional Skills

On completing the course, students should be able to:

P.1 Apply a number of IS tools and techniques such as rich-picture analysis, systems architecture models etc.

P.2 Utilize the integration of outputs of a number of different modeling tools and perspectives.

P.3 Describe the role and impact of context in influencing a number of methdology selection and configuration decisions.

P.4 Use the basic modelling tools to model information systems functional and data requirements.

d. General and Transferable Skills

On completing the course, students should be able to:

G.1 Working and presenting in a group in the area of information systems development.

G.2 Plan group work and integrate work done by different members.

G.3 Document group work and its results.

G.4 Design presentation and critique.

G.5 Conduct literature searching (e.g. using the Web) to understand and describe a new IS tool, method or technique.

V. Course Matrix Contents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	Introduction to Information Systems Development Methodologies.	1	K1,K2			G1
2-	An overview of techniques for IS development (e.g. conceptual models, rich pictures, data-flow diagramming, entity life cycles, object-oriented diagrams).	1			P1,P2	
3-	Alternative IS life cycle models: the prototyping, evolutionary, and spiral models	2	K3,K4			G1,G2
4-	IS development methodologies: SSADM, YSM, JSD, OOAD, and SSM.	2		I1,I2,I3		
5-	Organization and people-oriented methodologies	2			P3,P4	
6-	Concepts of systems architectures.	2	K1			G3,G4
7-	Methodology issues and frameworks.	1	K1			G5
8-	Comparing and selecting methodologies.	2		I4	P3,P4	
	Net Teaching Weeks	**13**				

VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours *
1	Introduction to Information Systems Development Methodologies.	2.5	2.5	
2	An overview of techniques for IS development (e.g. conceptual models, rich pictures, data-flow diagramming, entity life cycles, object-oriented diagrams).	4	2.5	1.5
3	Alternative IS life cycle models: the prototyping, evolutionary, and spiral models	4	2.5	1.5

4	Alternative IS life cycle models: the prototyping, evolutionary, and spiral models	4	2.5	1.5
5	IS development methodologies: SSADM, YSM, JSD, OOAD, and SSM.	4	2.5	1.5
6	IS development methodologies: SSADM, YSM, JSD, OOAD, and SSM.	4	2.5	1.5
7	**Midterm Exam**			
8	Organization and people-oriented methodologies	4	2.5	1.5
9	Organization and people-oriented methodologies	4	2.5	1.5
10	Concepts of systems architectures.	4	2.5	1.5
11	Concepts of systems architectures.	4	2.5	1.5
12	Methodology issues and frameworks.	4	2.5	1.5
13	Comparing and selecting methodologies.	4	2.5	1.5
14	Comparing and selecting methodologies.	4	2.5	1.5
15	**Final Exam**			
Total Teaching Hours		**51**	**33**	**18**

* **No Practical/Tutorial during the first week of the semester**

VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	X	All	I1		
Tutorials	X		I1,I2	P3	G4
Computer lab Sessions	X		I1	P1,P2,P4	
Practical lab Work	X		I1		
Reading Materials	X	All		P3	
Web-site Searches	X	K4	I4		G5
Research & Reporting					
Problem Solving / Problem-based Learning	X			P2,P3,P4	
Projects					
Independent Work	X		I2,I3,I4		G5
Group Work	X		I1,I3	P1,P2,P4	G3,G4
Case Studies	X			P1,P2,P4	G1,G2,G3
Presentations	X				G1,G2,G4
Simulation Analysis					
Others (Specify):					

VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	7
Final Exam	X	All	[ ]	[ ]	[ ]	60%	15
Quizzes	X	K1,K2,K3	[ ]	P4	[ ]	5%	11
Course Work	X	[ ]	[ ]	P1,P2,P3	All	10%	4,5,8,9,10,11
Report Writing	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Case Study Analysis	X	[ ]	[ ]	P1,P2,P4	G1,G2,G4	2%	4,5
Oral Presentations	X	[ ]	[ ]	P2	G1 G2,G4	3%	8
Practical	X	[ ]	[ ]	P1,P2	[ ]	5%	9,10
Group Project	X	[ ]	I2,I3	P1,P3,P4	[ ]	15%	11
Individual Project	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Others (Specify):	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

IX. List of References

Essential Text Books	• David Avison & Guy Fitzgerald (2007) Information Systems Development: Methodologies, Techniques and Tools. 4th ed. McGraw-Hill. ISBN-10 0-07-711 4175
Course notes	• None
Recommended books	• Fitzgerald, B., N. Russo and E. Stolterman (2002) Information Systems Development – Methods in Action, McGraw-Hill. ISBN 0-07-709836-6 • Jayaratna, Nimal (1994) Understanding and Evaluating Methodologies – NIMSAD, McGraw-Hill ISBN 0-07-707882-9

Periodicals, Web sites, etc …	• Web site for main textbook: http://www.id-book.com/
	• Reference Materials:
	  • http://www.dsdm.org
	  • http://www.groupsystems.com
	  • http://www14.software.ibm.com
	  • http://www.omg.org/gettingstatrted/what_is_uml.htm
	  • http://www.opensource.org/d.
	  • http://www.prince2.com
	  • http://agilemanifesto.org
	  • http://www.boxesandarrows.com/ : Boxes and Arrows is a site dedicated to interaction design and information architecture.
	  • http://www.extremeprogramming.org.
	  • http://www.rational.com/uml/index.jsp

	• Videos: • http://www.open-video.org/featured_video.php?type=Special&cid=8 : Some great videos from the ACM CHI conference on open-video.org.

X. Facilities required for teaching and learning

- Data show projector in lectures
- Overhead projector in the labs
- High speed Internet connectivity in both lecture halls and labs
- Microsoft Windows
- Microsoft Office Suite
- Rational CASE tool
- Select Professional CASE tool

Course coordinator: Prof. Galal Hassan Galal-Edeen

Head of Department: Ass. Prof. Ehab Ezzat

Date: September 2014