

Co-funded by the
Erasmus+ Programme
of the European Union

Project Title: Modernization of Teaching Methodologies in Higher Education: Eu Experience For Jordan And Palestinian Territory

Project acronym: METHODS

Project Number: 561940-EPP-1-2015-1-JO-EPPKA2-CBHE-JP

Funding scheme: Erasmus+ Programme (Capacity-Building projects in the field of Higher Education (E+CBHE))

Start date of the project: 15/10/2015 **Duration:** 36 months

Deliverable title	Course Outline		
Author(s)	Dr. Suhail Odeh		
Organisation name(s)	Bethlehem University		
WP Number	5		
WP Leader	Birzeit University		
Due date of delivery	18/06/2017	Project month	
Submission date	18/06/2017	Project month	
Total number of pages	6		

Project co-ordinator name, title and organisation:

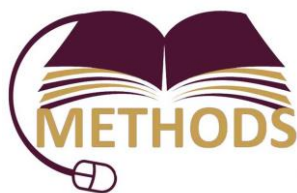
Prof. Ahmed Al-Salaymeh, The University of Jordan (UJ)

Address: Queen Rania Street, Amman 11942, Jordan

Tel: +962-6-53 55 000 Ext. 22816 **Mob:** +962-777-64 4364 **Fax:** +962-6-53 00 237

Email: methods@ju.edu.jo

Project website: <http://methods.ju.edu.jo>



Co-funded by the
Erasmus+ Programme
of the European Union

Bethlehem University

Science Faculty

Computer Information System

Course title/code	Systems Analysis & Design	CAIS233
Instructor /office	Dr. Suhail Odeh	S-06
Semester- Year	Fall 2017	
Compulsory/Elective	Compulsory	
Prerequisites	CAIS131	

Course Description	This course introduces students to basic concepts and modern tools and techniques of software engineering. We will emphasize the development of reliable and maintainable software via system requirements and specifications, software design methodologies including object-oriented design, implementation, integration, and testing. We will discuss software project management, life-cycle documentation, software maintenance, and consider social and human factor issues.
---------------------------	--

Generic Competences*	Successful completion of this course will enable the student to describe the entire life cycle needed to create an information system, including aspects such as system architecture, requirements analysis, interface design, output design, and project management issues.
Specific Competences (SCs)	<ol style="list-style-type: none">1. Describe the steps involved in the Systems Development Life Cycle.2. Describe several methods of gathering system requirements.3. Prepare a systems requirement specification (SRS) document.4. Analyze a systems requirement using Data Flow Diagrams.5. Analyze a systems requirement using UML.6. Design a solution using Flowcharts, Structure Charts and Entity-Relationship Diagrams.7. Design a solution using UML.8. Describe the issues and considerations in the transition from the design to operation phase of a system.

- These competences related also to the project Methods

	Course contents	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8
1	Introduction: The Systems Development Environment	X							
2	Requirements Modeling		X						
3	Data and Process Modeling			X					
4	Conceptual Data Modeling			X	X				
5	UML: Unified Modelling language					X		X	
6	Data modeling: E-R diagrams					X	X		
7	Designing the Human Interface				X				X
8	Designing Databases					X			X

Schedule				
Week	Subject	Activity Description *	Evaluation Criterion	
			Description	%
1	Introduction What is the System? What is Information System? The Systems Development Environment	MOOC will be used in this part: several subject short videos (2-5 min each) and online assessment tool Teamwork activity <i>Individual assignment I due (problem definition)</i>	Online quizzes after each video	2
2	<ul style="list-style-type: none"> The Sources of Software The systems development life cycle SDLC Methodology and approaches of SDLC Problem definition 		First Hour Exam	15
3	Requirements Modeling <ul style="list-style-type: none"> Determining System Requirements Structuring System Requirements: Interviews for collecting data 		Assignment I (problem definition and information gathering)	5
4-6	Data and Process Modeling:	Organizing for team projects	Oral presentation	8

	DFD Diagram <ul style="list-style-type: none"> Project Management essential Information gathering 	<p>Project Based Learning: each group select a real information system to analyze and gathering of functional and non-functional requirements.</p> <p>Inverted Classroom also will be used for Short videos for a sample of case study and discuss their ideas of their project in the classroom</p> <p><i>Team project draft due (Info gathering plan and scheduling)</i></p>	<p>Second Hour Exam</p> <p>Assignment II (System Design: DFD, UML, and ER Diagrams)</p>	<p>15</p> <p>5</p>
6-7	Conceptual Data Modeling <ul style="list-style-type: none"> Modeling sequences of events; Detailed task modeling; Activity diagrams 			
8-9	UML <ul style="list-style-type: none"> UML: Use Case diagrams, Class Diagram <p><i>Individual assignment II due (Flow/sequence/task models)</i></p>			
9-11	Data modeling: E-R diagrams <p><i>Individual assignment III due (Artifact/cultural physical models)</i></p>			
12	Designing the Human Interface <ul style="list-style-type: none"> User interface design; prototyping Usability testing Consolidating the models <p>A consolidated view of the data</p>	<p>MOOC; Short videos with online assessment tools</p>	<p>Online quiz</p>	<p>3</p>
13-15	Designing Databases	<p><i>Inverted Classroom to cover the theory part and PBL to cover the practical part</i></p> <p><i>Team project draft due: Integrated work models</i></p>	<p>Online quiz</p>	<p>5</p>
15-16	<p>Team project presentations</p>			<p>10</p>

* PBL, MOOC, Inverted Classroom should be introduced within activity description

Textbook and References	<p>Joseph S. Valacich, Joey F. George, Jeffrey A. Hoffer, <i>Essentials of Systems Analysis and Design Fifth Edition</i>, Pearson Prentice Hall 2014.</p> <p>Ian Sommerville, Software Engineering, 10th Edition, Addison-Wesley / Pearson Education Limited. 2012</p>	
Overall Assessment Criteria	Method	Weight [%]
	Attendance / participation	5
	Quizzes	10
	Midterm	30
	Project	20
	Assignments	10
	Final Exam	25

Assignment 1

Case study; where the student applies the techniques in order to analysis the data and gathering the requirements information about the system

Weighting: 5%

Purpose: To test the ability of the students on the determination of the system and user requirements.

Assignment 2

Case study: the student will build an alternative system for the existence system to enhance the performance and the operational of the system.

Weighting: 5%

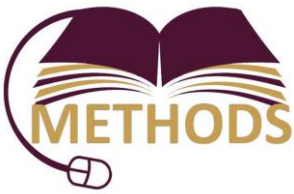
Purpose: To test the acquired skills in Design the system by using DFD and UML diagrams (class and use case diagram).

Project:

Purpose: The final project will be a group project that gives you an opportunity to apply the techniques that you've learned in this class to a new setting that you're interested in. Each group must choose one case, or any real or fictitious organization that uses information systems, and be able to demonstrate the use of several tools and applications introduced in this course. Specifically, you will build a system to solve a well-defined task and enhance the operational performance of this organization.

Presentation of the completed project, including project artifacts, will be made to the class by the entire group and CIS staff member will attend and evaluate your presentation.

The project should include a description and information not limited to the following steps:



Co-funded by the
Erasmus+ Programme
of the European Union

- Current Situation – What is the company doing? Under what circumstances? With what results? Try to grasp the important facts and critical interrelationships.
- Strategy – What's the current business and technology strategy (ies)? The strategy (ies) that you focus on will depend on the case. Is the current strategy appropriate given the situation?
- Issues and Options – What are the critical issues and associated options? For each issue, you should have several options for addressing the issue or eliminating the problem.
- Analysis – The quality of your solution is a function of the effort expended here. Analyze each option. Perform both qualitative and quantitative analyses. After you perform your analyses the recommendations will be straightforward.
- Recommendations: What will you recommend? Be specific and demonstrate the benefits. What issues are resolved? How will it save or earn the company money?
- Implementation – How will you implement your recommendations? What's going to happen? When? Who's involved? What are the risks? How will you measure success?