

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)	Mahmoud H. M. Saheb, Associate Prof.
Organisation name(s)	Palestine Polytechnic University
WP Number	5
WP Leader	Birzeit University

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>

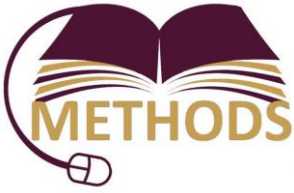
Palestine Polytechnic University

Information Technology and Computer Engineering College

Course title/code	Database Systems	CS 441
Instructor /office	Mahmoud H. M. Saheb, Associate Prof.	C21-227
Semester- Year	Fall 2017/2018	
Compulsory/Elective	Compulsory	
Prerequisites	Prerequisite: Data Structure (CS 211)	

Course Description	<p>Information models and systems; data modeling, relational database model, structured query language; relational database design; entity-relationship (ER) diagrams, ER to relational mapping, physical database design, transaction processing concepts, and functional dependencies and normalization for relational databases.</p> <p>The Objective of this course is to assist the student in understanding the basic theory and concepts of Database Systems, Relational database model, Database Design and Database manipulation Language, and to apply these basic theoretical principles in developing database applications.</p>
---------------------------	--

Generic Competences*	<p>General and Transferable skills (computing skills, work with team, ...)</p> <p>D1: Working with team D2: Using software tools independently D3: To create active learners</p>
Specific Competences (SCs)	<p>A- Knowledge and Understanding</p> <p>A1: Describe fundamental elements of a relational database management system A2: Explain the basic concepts of relational data model, entity-relationship model, relational database design, normalization, relational algebra and database language SQL</p> <p>B- Intellectual skills</p> <p>B1: Design entity-relationship diagrams to represent simple database application scenarios B2: Convert entity-relationship diagrams into relational tables, populate a relational database and formulate simple SQL queries on the data.</p>



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

	<p>B3: Criticize a database design and improve the design by normalization</p> <p>C- Professional and Practical skills (using tools, programs, surveys,..)</p> <p>C1: Using Ms Access for simple Tables creation and queries and Oracle SQL-Plus</p> <p>C2: Write SQL Queries</p>
--	--

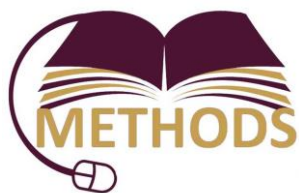
- These competences related also to the project Methods

	Course contents	A1	A2	B1	B2	B3	C1	C2	D1	D2	D3
1	Basic concepts (ch1, ch2)	x	x								x
2	Entity-Relational Modeling (ER-Model) (ch10.1-10.5,11,12,13)		x								
3	The Relational Model (ch 4)		x			x					
4	Relational Algebra (ch 5)		x					x			
5	Midterm Exam										
6	ER and EER to Relational Mapping (ch16,17)		x	x		x				x	
7	Normalization (ch14)		x		x	x					x
8	Introduction to SQL (ch6,7)		x				x	x		x	
9	Introduction to Selected Topics (SQL Oriented) Database Security, Transaction Management, Database Recovery		x				x	x			x
	Project		x	x	x	x	x	x	x	x	x
10	Final Exam										

Schedule				
Week	Subject	Activity Description *	Evaluation Criterion	
			Description	%
1,2	Basic concepts	Flipped Class: For understanding the problem of using traditional file–base approach, and how these problems can be solved using database approach (Competencies: A1, A2)	Before class activities: In class activities: After class Activities: Videos and hands-on materials will be developed for all activities **	6
3,4	Entity-Relational Modeling			8
5,6	The Relational Model			
6	Project (case study)	Project Based Learning: For developing simple database application (Competencies: A2,B, C, D)		
7	Relational Algebra			6

7	Midterm Exam			
8	ER and EER to Relational Mapping			4
9,10	Normalization	Problem Based Learning: How we can use a systematic approach of decomposing tables to eliminate data redundancy and undesirable characteristics like Insertion, Update and Deletion Anomalies; the normalization process. (Competencies: B3)	Anomalies – 1p Functional Dependencies – 2p Normalization - 7p	10
11,12,13	Introduction to SQL			4
14	Introduction to Selected Topics			2
15	Project submission and Presentations		<ul style="list-style-type: none"> • Students get a proportion of their marks according to individual contribution to the process. • Assessment pro-forma with weightings for each aspect of the project and the Presentation is developed. • Students are informed of the requirements and assessment criteria. Grades: Entity Relationship Diagram - 2 point; Relationships - 2 points; Data Definitions - 3 points; Tables - 3 points; Input Form - 2 points; Hardcopy of Query - 2 points; Report - 2 points; Presentation and Discussion - 4 points.	16% 4%
16	Final Exam			

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



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

Textbook and References		
Overall Assessment Criteria	Method	Weight [%]
	Attendance / participation	10
	Quizzes	10
	Midterm	20
	Project	20
	Assignments	10
	Final Exam	30

https://staff.mq.edu.au/teaching/evaluation/resources_evaluation/developing_unit/assess_achievement/

** <http://www.schoolnet.org.za/wp-content/uploads/ICT4RED-Module-6-Flipped-classroom-Teacher-manual.pdf>