

**THE CYPRUS INTERNATIONAL INSTITUTE OF MANAGEMENT**

**COURSE UNIT DESCRIPTION**

<b>Course Unit Title</b>	<b>Database Management and Cloud Computing</b>	
Course Unit Code	BI405	
Type of Unit	Core	
Level of Course Unit	Second Cycle	
Year of Study	First/second year	
<b>Number of ECTS Credits</b>	6.0 ECTS	
<b>Class Contact Hours</b>	28	
<b>Minimum Learning Effort (In Hours)</b>	150	
<b>Course Unit Objectives</b>	<p>This course investigates how current database management system and cloud-based techniques are employed in the design, development, implementation and maintaining of database and cloud-related applications in modern organizations. The aim of this course is to teach students the theory behind data management, database implementations, as well as concepts related to the use of cloud technologies. Both theoretical and practical aspects of databases and cloud computing will be taught.</p> <p>Upon completion, the students are expected to be able to design and implement suitable database solutions for their organization needs and develop critical understanding of the security implications and performance issues for both database and cloud technologies.</p>	
<b>Learning Outcomes</b>	The students completing the course should be able to	
	CILO 1	Understand basic database concepts and structures.
	CILO 2	Understand database design and management.
	CILO 3	Demonstrate understanding of data modelling and database development process. Construct and normalize conceptual data models.
	CILO 4	Understand the security and performance issues involved to databases.
	CILO 5	Demonstrate ability to use a database query language.
	CILO 6	Characterization of different cloud computing models. Comparison and evaluation of the key trade-offs between multiple approaches to cloud system design.
	CILO 7	Understanding security and privacy issues related to cloud computing.
	CILO 8	Demonstrate critical assessment of cloud computing solutions for an enterprise and build sufficient skills to provide leadership in cloud-architecture projects in the areas of their responsibility.
Name of Lecturer(s)	Dr. Kyriacos Pavlou	
Mode of delivery	Face to Face	

Prerequisites or co-requisites	None	
Course Content	1. Overview of database architectures: relational, hierarchical, network and object models.	CILO 1,2
	2. Overview of different data type and their challenges in terms of storage; structured, semi-structured, unstructured.	CILO 1
	3. Introduction to database design and management; entity-relationship model.	CILO 2
	4. Overview of Database Management Systems (DBMS): MySQL, Microsoft Access, Oracle SQL Server.	CILO 3,4
	5. Introduction to database security: access controls, policies, means of authentication, privilege and insider threats.	CILO 4
	6. Database Query Language: SQL	CILO 5
	7. Introduction to different cloud computing models: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS)	CILO 6
	8. Security and Privacy issues in Cloud Computing	CILO 7
	9. Database and Cloud-based Design, Implementation and Security in an enterprise	CILO 4,8
Recommended or required reading	<p><b>Required Reading</b></p> <ol style="list-style-type: none"> <li>1. Elmasri and Navathe. <i>Fundamentals of Database Systems</i>. Pearson, 7<sup>th</sup> edition, 2016.</li> <li>2. Chandrasekaran. <i>Essentials of Cloud Computing</i>. CRC Press, 2015.</li> </ol> <p><b>Recommended Reading</b></p> <p>Textbooks</p> <ol style="list-style-type: none"> <li>3. Thomas Connolly. <i>Database Systems: A practical approach to design, implementation and management</i>. Pearson Publishing, 6<sup>th</sup> Edition, 2014.</li> </ol> <p>Research Articles</p> <ol style="list-style-type: none"> <li>4. Thomas Chen, Chuang Ta-Tao and Nakatani Kazuo. <i>The Perceived Business Benefit of Cloud Computing: An Exploratory Study</i>. Journal of International Technology &amp; Information Management, Vol.25(4),2016.</li> <li>5. Anne Keehn. <i>Institution's Complexity, Resources and Future Needs Influence Database Selection</i>. T H E Journal, Vol 29(10), 2002.</li> <li>6. Danut Octavian Simion and Emilia Vasile. <i>Applications for business that uses relational databases</i>. Internal Auditing &amp; Risk Management, Vol 12(1), 2017.</li> </ol>	

Planned learning activities and teaching methods	lectures, group work, lab work, role playing, project-based learning, homework
Assessment methods and criteria	Class participation: 10% Assignments: 50% In-class examination: 40%
Language of Instruction	English
Work Placement(s)	Not applicable