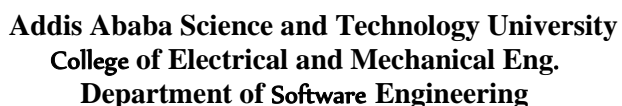


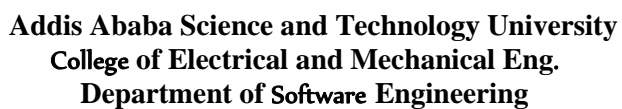
Addis Ababa Science and Technology University																			
1	College: Electrical and Mechanical Engineering									Department: Software Engineering									
2	Course Category	Core Course								Category Code:1									
	Course Name	Database Systems																	
	Course Code:	SWEG2108																	
3	Synopsis:	This course is intended enable students to implement different concepts from the very basic to advance SQL on a variety of DBMS. It starts by dealing with introduction to SQL like SQL Data Definition, SQL Data Manipulation, Basic Structure of SQL Queries, Nested Subqueries and Additional Basic Operations. Then it goes to working with Intermediate SQL like Join Expressions, Views, Integrity Constraints, Transactions, Authorization. Lastly, the advanced SQL like Trigger, Concurrency Control Techniques, Database Recovery Techniques, Database Security and Authorization Enhanced Data Models for Advanced Applications will be covered. Finally, besides to the concept of SQL Systems, the NoSQL systems will be briefly introduced.																	
4	Name(s) of Academic Staff:	Yaynshet Medhin Assefa																	
5	Semester and Year offered:	Semester:	II					Year:	2										
6	Credit Hour:	4																	
7	Prerequisite/ Co-requisite: (if any)	None																	
8	Course Learning Outcome (CLO): At the end of the course the student will be able to																		
	CLO1	Explain fundamentals of database system concepts, technology and practice and apply to groom into well-informed database application developers																	
	CLO2	Analyze and identify a model of conceptual, logical and physical design for a given database																	
	CLO3	Design a given database and demonstrate it for applications using a popular DBMS																	
	CLO4	Apply Database Design (DBD) and Data Manipulation Language (DML) Tasks for a give DBMS.																	
9	Mapping of the course Learning Outcomes to the program Learning Outcomes, Teaching Methods and Assessment:																		
	Course Learning Outcomes (CLO)	Program Learning Outcomes (PO)												Teaching Methods	Assessment				
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		Test	Quiz	Assi	Proj	Lab-

[illegible]



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**Department of Software Engineering**

model	2	7	-	11	-	8	11	37
2.4 SQL components								
2.5 Entity, Attribute, Entity set								
2.6 Types of attributes								
2.7 Degree of relationship								
2.8 Cardinality of relationship								
<b>Chapter 3: Database Designs</b>								
3.1 Relational and non-relational data base design	3							
3.2 Relational constraint/integrity rule								
3.3 Key constraint								
3.4 Relational view								
3.5 Instance, schema								
3.6 ER Model and diagram		12.5	-	8	-	1.5	12	34
3.7 Mapping ER into Relational Tables								
3.8 Relational algebra and calculus concepts								
3.9 Relational algebra operators								
<b>Chapter 4: Database Normalization</b>								
4.1 Database Normalization	3,4							
4.2 Purpose of Normalization								
4.3 Data redundancy and anomalies examples								
4.4 Functional dependency		2.5	-	6	-	-	5	13.5
4.5 Formal definition of the normal forms with examples								
<b>Chapter 5: SQL and NoSQL Systems</b>								
5.1 Introduction to SQL/NoSQL								
5.2 Creating and connecting a data base								



	5.3 Creating tables		3,4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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**Department of Software Engineering**

13	Reference Books:	1	R. Elmasri and S. B. Navathe, "Fundamentals of. Database Systems," 7th Edition, Addison Wesley
		2	Silberschatz, Korth, and Sudarshan. <i>"Database System concepts – 7th Edition"</i> , McGraw Hill, 2002.
		3	Date C.J. <i>"An Introduction to Database Systems – 8th Edition"</i> Addison-Wesley
		4	Connolly T. & Begg C. <i>"Database Systems – 6nd Edition"</i> Addison Wesley.