SQL **Instructor: Yogesh Kuvelkar**

Class	Content	Home work

1 -INTRODUCTION	• HISTORY OF DATABASES
	• TYPES OF DATABASE
	• RELATIONAL DATABASE TERMINOLOGY
	  ○ Row
	  ○ Columns
	  ○ Tables
	  ○ Normalization
	  ○ Relationships
	  ○ Keys
	  ○ Index
	• RELATIONAL DATABASE VENDORS
	• WHAT IS SQL
	• SQL BASIS - RELATIONAL ALGEBRA
	• STRUCTURE
	  ○ *CLAUSES*
	  ○ *EXPRESSION*
	  ○ *PREDICATES*
	  ○ *QUERIES*
	  ○ *STATEMENTS*
	• EXAMPLES
	  ○ *SELECT **
	  ○ *SELECT COLUMNS*
	  ○ *SELECT COLUMNS WHERE*
		Reading assignments

2 – CRUD OPERATIONS	• SQL EDITOR OVERVIEW
	• CRUD OPERATIONS (create – read – update – delete)
	• *CREATE*
	  ○ *Syntax*
	  ○ *Data types*
	  ○ *Keys*
	  ○ *Index*
	  ○ *Views*
	• *UPDATE*
	  ○ *Syntax*
	  ○ *Keys*
	• *DELETE*
	  ○ *Syntax*
	• SAKILA DATABASE
	  ○ Overview
	  ○ Schema
	  ○ Tables
	  ○ Index
		SQL exercises

3 – Keys and Joins	• KEYS
	  ○ *Primary*
	  ○ *Foreign Keys*
	• JOINS
	  ○ *INNER*
	  ○ *OUTER*
	• SELECT
	  ○ *Select **
	  ○ *Select columns*
	  ○ *Select * where*
	  ○ *Subquery*
	  ○ *Select joins*
	HANDS ON EXERCISE
		SQL exercises

4 – Practice Session (aggregations)	○ HANDS ON EXERCISE	SQL exercises
4 – Practice Session (Joins)	○ HANDS ON EXERCISE •	SQL exercises

6 - Machine learning and Artificial Intelligence	• VIEWS
	  ○ Benefits
	  ○ Materialized Views
	  ○ Unmaterialized Views
	• STORED PROCEDURES
	  ○ Benefits
	  ○ Create
	  ○ Use
	• Hands on Exercise
		SQL exercises

Sample questions for Capstone Project (Actual questions might be different)

1. What is the order in which DBMS parses the SQL? (Hint chapter 1)
2. If you have to store feedback from a customer in a table, what datatype will you use for the field?

   Using Sakila database, solve the following
3. Write a query to display how much business, in dollars, each store brought in.
4. Write a query to display for each store its store ID, city, and country.
5. List the top five genres in gross revenue in descending order. (Hint: you may need to use the following tables: category, film_category, inventory, payment, and rental.)
6. Retrieve the names of actors/actresses who have never appeared in any 'R' rated movies. Use IN/NOT IN
7. Retrieve the title of film with the most DVD copies. List title and the # of DVD copies