

## Geomatics Course Catalog

<b>Course Title</b>	<b>Course Description</b>	<b>Duration (Days)</b>
<b>Introduction to Oracle SQL *Plus</b>	<p>This course covers the concepts of relational database and the powerful SQL programming language. Participants will learn to create and maintain database objects and to store, retrieve and manipulate the data stored in the database. It will consists of both theoretical and practical to enhance the participants understanding of the language.</p> <p><i>Objective: After completion of the course, participants will be able to:</i></p> <ol style="list-style-type: none"> <li>1. <i>Able to construct SQL queries.</i></li> <li>2. <i>Able to create database objects such as tables, views and more.</i></li> <li>3. <i>Understand database users and privileges so as not to compromise database security.</i></li> <li>4. <i>Know the Oracle Data Dictionary.</i></li> </ol> <p><i>Pre-requisite: Basic knowledge in Windows Environment</i></p> <p>Course Outline:</p> <ul style="list-style-type: none"> <li>• Chapter 1: Selecting Rows <ul style="list-style-type: none"> <li>▪ SQL *Plus Commands</li> <li>▪ Displaying Table Structure</li> <li>▪ SQL *Plus Editing Commands</li> <li>▪ The Basic Query Block</li> <li>▪ Writing SQL Commands</li> <li>▪ Selecting All Columns and Rows</li> <li>▪ Selecting Specific Columns</li> <li>▪ Arithmetic Expressions</li> <li>▪ Column Aliases</li> <li>▪ The Concatenation Operator</li> <li>▪ Literal Character String</li> <li>▪ Managing Null Values</li> <li>▪ Preventing the Selection of Duplicate Rows</li> </ul> </li> <li>• Chapter 2: Limiting Selected Rows <ul style="list-style-type: none"> <li>▪ Ordering Rows with the ORDER BY Clause</li> <li>▪ Limiting Selected Rows with the WHERE Clause</li> <li>▪ Comparison Operators</li> <li>▪ Negating Expressions</li> <li>▪ Logical Operators</li> <li>▪ SWL Operators</li> <li>▪ Querying Data with Multiple Conditions</li> <li>▪ Rules of Precedence</li> </ul> </li> <li>• Chapter 3: Single Row Functions <ul style="list-style-type: none"> <li>▪ Single Row Functions</li> <li>▪ Character Functions</li> <li>▪ Number Functions</li> <li>▪ SYSDATE</li> <li>▪ DUAL</li> <li>▪ Oracle Data Format</li> <li>▪ Using Arithmetic Operators with Dates</li> <li>▪ Date Functions</li> </ul> </li> </ul>	3

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	<ul style="list-style-type: none"> <li>▪ Conversion Functions</li> <li>▪ TO_CHAR Functions with Date Formats</li> <li>▪ TO_NUMBER and TO_DATE Functions</li> <li>▪ Nesting Single Row Functions</li> <li>• Chapter 4: Displaying Data from Multiple Tables                             <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ Using ANSI Syntax</li> <li>▪ Cartesian Joins</li> <li>▪ Cross Joins</li> <li>▪ Simple Join Query</li> <li>▪ Equijoin</li> <li>▪ Natural Join</li> <li>▪ Complex Joins</li> <li>▪ Non-Equijoin</li> <li>▪ JOIN ... ON</li> <li>▪ Outer Join</li> <li>▪ Self Join</li> </ul> </li> <li>• Chapter 5: Group Functions                             <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ Group Functions</li> <li>▪ The GROUP BY Clause</li> <li>▪ The HAVING Clause</li> </ul> </li> <li>• Chapter 6: Subqueries                             <ul style="list-style-type: none"> <li>▪ Subqueries</li> <li>▪ HAVING Clause with Nested Subqueries</li> </ul> </li> <li>• Chapter 7: Creating Tables                             <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ Data Structures</li> <li>▪ Creating Tables</li> <li>▪ Oracle Datatypes</li> <li>▪ Constraints</li> <li>▪ Creating a Table from Rows in Another Table</li> </ul> </li> <li>• Chapter 8: Oracle Data Dictionary                             <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ What is Data Dictionary</li> </ul> </li> <li>• Chapter 9: Manipulating Data                             <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ Adding a New Row to a Table</li> <li>▪ Copying Rows from Another Table</li> <li>▪ Updating Rows</li> <li>▪ Deleting Rows</li> <li>▪ Database Transactions</li> <li>▪ Committing Changes</li> <li>▪ Rolling Back Changes</li> </ul> </li> <li>• Chapter 10: Altering Tables and Constraints                             <ul style="list-style-type: none"> <li>▪ Adding a Column</li> <li>▪ Modifying a Column</li> <li>▪ Adding and Dropping a Constraint</li> <li>▪ Disabling and Enabling a Constraint</li> <li>▪ Dropping a Table</li> <li>▪ Renaming and Truncating a Table</li> <li>▪ Adding a Comment to a Table</li> <li>▪ Remove a comment from a column</li> </ul> </li> </ul>	

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	<ul style="list-style-type: none"> <li>• Chapter 11: Creating Views               <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ What is a View?</li> <li>▪ Creating a View</li> <li>▪ Performing DML Operations on a View</li> <li>▪ Denying DML Operations</li> <li>▪ Confirming View Names and Structures</li> <li>▪ Removing a View</li> </ul> </li> <li>• Chapter 12: Controlling User Access               <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ Creating a User</li> <li>▪ Granting System Privileges</li> <li>▪ What is a Role?</li> <li>▪ Changing Your Password</li> <li>▪ Object Privilege</li> <li>▪ Creating and Removing Synonym for an Object</li> </ul> </li> <li>• Chapter 13: Summary of SQL and SQL *Plus               <ul style="list-style-type: none"> <li>▪ Summary of SQL and SWL *Plus</li> <li>▪ Oracle Data Dictionary</li> </ul> </li> </ul>	