



**קורסי  
בסיסי  
נתונים**

## Microsoft SQL Server

### Course Description

This course provides database developers with a deep understanding of theoretical and practical T-SQL programming skills required for developing high performance, modular and maintainable SQL Server applications.

Students will learn and experience the importance of excellent database design and development. The course begins with the theoretical background of set theory, database design principals and gradually dives deeper into advanced T-SQL programming, query logical processing phases and its impact on query performance.

Students will learn how to write efficient queries and use advanced T-SQL techniques to solve challenging programming tasks, learn how to analyze execution plans, design efficient indexing scheme, understand transactions and isolation levels and how to properly implement all these by efficiently using programming objects provided by SQL Server for enterprise level applications.

### This course is intended for:

The course is intended for those with basic knowledge of the Microsoft Windows operating system and its core functionality and with some experience with database design.

### Teaching methodology

Frontal lectures, demonstrations and simulations in the learning environment, and personal practice accompanied by professional literature.

# קורסי בסיסי נתונים

**Academic hours:** 40

**Course requirements:**

A graduation certificate from iNT will be awarded if all the following requirements are met:

- Attendance in at least 85% of the lessons.
- Submission of all exercises, assignments, tasks and projects provided during the course.

**Faculty members**

Our lecturers and training experts are highly experienced in implementing and guiding the subjects of study in the Israeli and global hi-tech industry.

This course will include lecturers who are test experts with wide practical experience in the field of software testing and training in the Israeli and global high-tech industry.



**קורסי  
בסיסי  
נתונים**

**Technical curriculum**

**Module 1: Introduction to Basic Database Concepts**

In this module we learn about Basic concepts and advantages of DBMS and limitations of file management system, and also about 3 data base models.

- What is Data, Field, Record and database?
- Limitations of File Management System.
- Basic Concepts of Advantages of DBMS. Exploring Relational DBMS
- Understanding Client and Serve

**Module 2: Introduction to SQL Server**

In this module we learn about SQL Server, history of SQL server, types of system databases, communication between frontend and backend and SQL server editions.

- What is SQL Server Version history and different editions
- Basic Features, Components and Tools
- Starting and Stopping SQL Server Instances / Services
- Introduction to Management Studio
- Types of System Databases in SQL

**Module 3: Introduction to SQL**

In this module we learn about types of SQL statements, databases in SQL server, how to create a database, datatypes in SQL server, and about DDL Statements.

- Basics of SQL Types of SQL Statements
- DDL, DML, DQL, DCL and TCL
- Create Database using Management Studio
- Datatypes in SQL Server
- Exploring DDL Statements on Table using Management Studio



**קורסי  
בסיסי  
נתונים**

**Module 4: Data Control language (DCL)**

In this module, we will learn how to grant permission and revoking of roles.

- Creating Users & Roles
- Granting & Revoking of Roles & privileges
- Managing using Management Studio

**Module 5: Working with Indexes**

In this module, how to create a index, advantages and disadvantages of index, and types of index and dropping index, and also about index structure.

- Introduction Clustered and Non-Clustered Index
- Creating and Dropping Indexes

**Module 6: Writing Transact-SQL (T-SQL)**

In this module, what is script and what is batche, variables and if else statements and working with temporary tables and checking with the existence of database objects.

- What is T-SQL?
- Scripts and Batches Declaring Variables
- Using Statements
- Working with Temp tables
- Error Handling
- Using System Functions / Global Variables
- Using Dynamic SQL



**קורסי  
בסיסי  
נתונים**

**Module 7: Backup and Restore**

In this module, how to backup database and how to restore a database and how to generate a SQL script, and executing a SQL script and how to attach and detach a database.

- Generating SQL Script
- Executing SQL Script
- Generating Change Script
- Taking database Backup
- Restoring database using backup
- Attaching and Detaching of database

**Module 8: Advance Features**

In this module we will learn about ranking functions and about how to use xml datatype.

- Pivot Table
- Common Table Expression
- Ranking Functions
- Using BLOB data type
- Using XML data type

It is hereby clarified that the College reserves the right, from time to time, to make changes in the curriculum, the scope of study hours, faculty members and so on. No information contained in the College's information sheets shall be considered to be any liability on its part.