

# Course : ADO.NET Entity Framework, mastering and optimizing

*Practical course - 2d - 14h00 - Ref. EFC*

*Price : 1500 CHF E.T.*

★★★★☆ 3,8 / 5

During this course, you'll gain an understanding of all Entity Framework services and see how to use them to simplify data access in your .NET applications. You'll learn how to perfect your queries and achieve optimal execution times.

## Teaching objectives

At the end of the training, the participant will be able to:

- ✓ Creating an Entity Framework data model
- ✓ Data context configuration
- ✓ Understanding how offline mode works
- ✓ Mastering data loading
- ✓ Control and optimize update operations
- ✓ Managing schematic changes with migrations

## Intended audience

Developers responsible for data access in .NET applications. Project managers, software architects.

## Prerequisites

Good knowledge of C# and data access with the .NET framework. Experience required.

## Course schedule

### 1 Introduction

- Principle and benefits of Relational Object Mapping.
- Entity Framework version history.
- Entity Framework architecture.
- CodeFirst or BaseFirst approach.

### PARTICIPANTS

Developers responsible for data access in .NET applications. Project managers, software architects.

### PREREQUISITES

Good knowledge of C# and data access with the .NET framework. Experience required.

### TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

### ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more. Participants also complete a placement test before and after the course to measure the skills they've developed.

## 2 Creating a database

- Choice of data provider.
- Connection configuration.
- Create a model and data context.
- Mapping conventions.
- Database creation and initialization.

### Hands-on work

Create a database from a simple model.

## 3 Data model definition

- Definition of mapping via annotations or Fluent API.
- Mapping of enums and complex types.
- Inheritance (TPT, TPH and TPC).
- Using views.

### Hands-on work

Create a multi-table database with type and relationship configuration.  
Create and map a view.

## 4 Migration

- Preparation of migration tools (installation and creation of history table).
- Creation of a migration.
- Run a migration in Visual Studio or by code.
- Migration management.

### Hands-on work

Current migrations.

## 5 Querying with LINQ to Entities

- Understand the SQL generation mechanism.
- View operations with logs.
- A reminder of how LINQ works (extension methods, lambdas and common operators).
- Role of navigation properties.
- Control the loading of entities and related data.

### Hands-on work

Create a model based on an existing database and perform common queries, including different scenarios for loading entity sets.

## 6 Data updates

- Understand the role of the entity tracking service.
- Data updating (insertion, deletion, modification).
- Manage update exceptions.
- Optimize updates with local validations.
- Execute SQL commands.

### Hands-on work

Implementation of the points presented.

### TEACHING AIDS AND TECHNICAL RESOURCES

- The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
- At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
- A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

### TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

### ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

## 7 Advanced techniques

- Competitive conflict management (detection and resolution).
- Using stored procedures.
- Transactions through the application.

### Hands-on work

Implementation of the points presented.

## 8 Repository and UOW architecture models

- Interest in and implementation of the Repository model.
- Context sharing with UOW.
- Principle of the dependency injection system.

### Hands-on work

Implementing a repository with dependency injection in an ASP NET MVC application.

## Dates and locations

### REMOTE CLASS

2026 : 13 Apr., 29 June, 9 Nov.