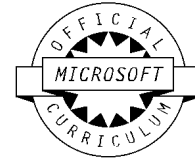


## Course Outline

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### 80437-C/Side Solution Development in Microsoft Dynamics NAV 2013

**Duration:** 5 days (30 hours)



#### Target Audience:

This course is intended for a partner that sells and implements the C/SIDE Solution Development module to customers. The typical partner has an ERP background.

#### Prerequisites:

Before attending this course, students must have:

- knowledge of Microsoft Dynamics NAV 2013
- completed course 80436A C/SIDE Introduction in Microsoft Dynamics NAV 2013

#### Topics Covered:

- Module 1: Data and Process Model
  - Table Types and Characteristics
  - Standard Data Model
  - Standard Process Model

After completing this module, students will be able to:

- Explain the different table types and their characteristics.
- Present the standard data model and introduce the data-related business logic.
- Present the standard process model that governs the transactions in Microsoft Dynamics NAV 2013.

- Module 2: Master Tables and Pages
  - Prerequisite Knowledge
  - Participants
  - Instructors and Rooms
  - Seminars
    - Lab : Customize Resource Tables and Pages
      - Customize Resource Table
      - Customize Resource Card
      - Customize Resource List
    - Lab : Creating Seminar Tables and Pages
      - Append the Table Name Option in the Comment Line table
      - Create the Seminar Tables
      - Create the Seminar Pages

After completing this module, students will be able to:

- Explain the master table and page standards.
  - Work with table event triggers.
  - Work with complex data types and their member functions.
  - Explain the multilanguage functionality.
  - Define the strategy for implementing Customers and Participants.
  - Create the tables to manage the seminar rooms.
  - Create instructor data management.
  - Create seminar data management.
- Module 3: Documents
- Prerequisite Knowledge
  - Registrations
  - Reviewing the Table Code
    - Lab : Importing, Reviewing, and Completing the Seminar Registration Tables
      - Import the Starter Objects
      - Review the Seminar Registration Header Table
    - Lab : Create Seminar Registration Pages
      - Import and Review the Pages
      - Completing the Document Pages

After completing this module, students will be able to:

- Import and export objects as text files.
  - Support multilanguage functionality.
  - Use document pages.
  - Use virtual tables.
  - Use temporary tables.
  - Review the various types of tables.
  - Review different page and table C/AL functions.
  - Create additional tables and pages to maintain registrations.
- Module 4: Posting
- Prerequisite Knowledge
  - Posting Seminar Registrations
    - Lab : Reviewing and Completing the Journal and Ledger Tables
      - Reviewing the Import File Contents and Importing the Objects
      - Reviewing the Seminar Journal Line Table
      - Reviewing Other Tables
      - Customize the Source Code Setup Table and Page
    - Lab : Creating Codeunits and Pages for Seminar Journal Posting
      - Create the Seminar Jnl.-Check Line Codeunit
      - Create the Seminar Jnl.-Post Line Codeunit
      - Create the Seminar Ledger Entries Page
      - Create the Seminar Reg.-Show Ledger Codeunit
      - Create the Seminar Registers Page

- Lab : Creating the Tables and Pages for Posted Registration Information
  - Create the Posted Registration Tables
  - Import the Posted Registration Pages
- Lab : Modifying Tables, Pages, and Codeunits for Resource Posting
  - Modify the Objects
- Lab : Creating the Codeunits for Document Posting
  - Complete the Seminar-Post Codeunit
  - Enable Posting from the Seminar Registration Pages

After completing this module, students will be able to:

- Explain the working and posting tables.
- Explain the posting routines and their relationships.
- Create journal posting routines.
- Create document posting routines.
- Present the best practices for documenting changes to existing objects.
- Program for minimum effect on the application.

➤ Module 5: Feature Integration

- Prerequisite Knowledge
- Seminar Feature Integration
- Navigate Integration
  - Lab : Integrating Seminar Features
    - Customize Seminar Registration Master Pages
  - Lab : Changing Objects to Integrate with Navigate
    - Customize Tables
    - Customize the Navigate Page
    - Customize Pages

After completing this module, students will be able to:

- Integrate previously created Seminar Management module features with one another.
- Explain the architecture of the **Navigate** feature.
- Extend the **Navigate** functionality to enable finding posted seminar information.
- Enable easier searching for information by adding **Navigate** functionality to Seminar Management pages.
- Enable looking up Seminar Management information from standard application areas.

➤ Module 6: Reporting

- Prerequisite Knowledge
- Reporting Lab Overview
- Participant List Reporting
- Invoice Posting Batch Job
  - Lab : Creating the Seminar Participant List
    - Part A: The Report Dataset
    - Part B: The Report Layout
    - Part C: Report Selections Table and Page

- Part D: Testing
- Lab : Creating the Invoice Posting Batch Job
- Module 7: Statistics
  - Prerequisite Knowledge
  - Seminar Statistics
  - Lab : Creating FlowFields for Sums
    - Implement FlowFields for sums in the Seminar solution
  - Lab : Creating the Seminar Statistics Page
    - Implement a Statistics Page

After completing this module, students will be able to:

- Create a page that calculates price sums efficiently.
- Make the page available from the Seminar pages.
- Use FlowFilters to easily calculate statistics for different time periods.

- Module 8: Dimensions
  - Prerequisite Knowledge
  - Integrating Seminar Management with Dimensions
    - Lab : Integrating with Dimension Management
      - Extending Master Data with Dimensions
      - Extending Documents with Dimensions
      - Extending Ledger Entries and Posting Process with Dimensions

After completing this module, students will be able to:

- Describe Global, Shortcut, and Budget dimension types and their functions.
- List the basic rules of Dimension Setup.
- Present the dimension management data and process models.
- Implement dimensions on the master record level.

- Module 9: Role Tailoring
  - Prerequisite Knowledge
  - Seminar Manager Role Center
  - MenuSuite Object Type
  - Seminar Management Department Page
    - Lab : Create the Seminar Manager Role Center
    - Seminar Activity Page
      - My Seminars Page
      - The Role Center Page
    - Lab : Create Seminar Management Department Page
      - Create and Design the MenuSuite

After completing this module, students will be able to:

- Define the components of the RoleTailored user interface.
- Explain the structure, purpose, and functionality of a Role Center-type page.
- Create the Seminar Manager Role Center page.
- Describe the functionality of the **Departments** page and the MenuSuite object type.

- Integrate the Seminar Management department into the **Departments** page.

➤ **Module 10: Interfaces**

- Prerequisite Knowledge
- Email Confirmation
  - Lab : Create Email Confirmations
    - Import the Setup Table and Page
    - Verify the Configuration
    - Create the Codeunit

After completing this module, students will be able to:

- Explain how to use Automation and OCX to perform tasks with other applications.
- Describe file handling functions to import or export data.
- Design and implement email capability.

➤ **Module 11: Web Services**

- Prerequisite Knowledge
- Registration Web Service
  - Lab : Creating a Web Service
    - Customize the Objects
    - Configure and Test the Web Service
    - Extend the ScheduledSeminar Web Service with an Extension Codeunit
  - Lab : Create a Windows Forms Application to Test the Web Service
    - Create a new Windows Forms Application

After completing this module, students will be able to:

- Describe Microsoft Dynamics NAV 2013 Web services architecture.
- Explain the protocols that Microsoft Dynamics NAV 2013 uses for Web services.
- Evaluate the benefits of Web services over other integration options in Microsoft Dynamics NAV.
- Explain how to expose codeunit, page, and query objects as Web services.
- Consume Web services from external applications.

➤ **Module 12: Testing and Debugging**

- Prerequisite Knowledge
- Testing Seminar Management
- Debugging
  - Lab : Create Seminar Management Unit Tests
    - Import the Testing Framework
    - Create the Unit Tests
    - Run Unit Tests

After completing this module, students will be able to:

- Demonstrate the testing features of Microsoft Dynamics NAV 2013.
- Explain the test codeunits, test functions, and handler functions.
- Describe how to automate user interface testing.
- Explain the functionality and purpose of test runner codeunits.

- Develop a unit testing framework for the Seminar Management solution.
- Describe the Debugger functionality and features.
- Demonstrate the debugging process.

➤ Module 13: Optimizing for SQL Server

- SQL Server for Microsoft Dynamics NAV
- Representation of Microsoft Dynamics NAV Tables and Indexes in SQL Server
- Collation Options
- SQL Server Query Optimizer
- Optimizing a Microsoft Dynamics NAV Application
- Data Access Redesign
- C/AL Database Functions and Performance on SQL Server
- Bulk Inserts
- Locking, Blocking, and Deadlocks
- SIFT Data Storage in SQL Server
- SQL Server Profiler
  - Lab : Analyze Index Usage
    - Use the Index Information Query to identify and disable unused indexes
  - Lab : Optimize C/AL Code
    - Analyze and improve the C/AL code and corresponding SQL statements

After completing this module, students will be able to:

- Explain the advantages of SQL Server for Microsoft Dynamics NAV 2013.
- Work with tables and indexes.
- Use collation options and descriptions.
- Explain SQL Server Query Optimizer.
- Explain the areas within Microsoft Dynamics NAV that can be optimized.
- Explain how the Microsoft Dynamics NAV database driver enables the Microsoft Dynamics NAV clients to communicate with SQL Server.
- Understand the performance effect of locking, blocking and deadlocks.
- Understand how SIFT data is stored in SQL Server.

➤ Module 14: Appendix

- CRONUS International Ltd.
- Functional Requirements
- Content Structure
  - Lab : Function Testing
    - Function Testing: Master Tables and Pages
    - Function Testing: Documents
    - Function Testing: Posting
    - Function Testing: Feature Integration
    - Function Testing: Dimensions
    - Function Testing: RoleTailoring

After completing this module, students will be able to:

- Present the case study for the CRONUS International Ltd. implementation project.
- Provide test scripts for function testing of customized functionality

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