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## MICROSOFT DYNAMICS NAV – COURSE OUTLINE

### 1) MICROSOFT DYNAMICS NAV – C/SIDE SOLUTION DEVELOPMENT

#### Module 1: Data and Process Model

This module explains the standard application functionality in Microsoft Dynamics NAV 2013 and it discusses the importance of following the same standards in all customizations.

#### Lessons

- 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

This module explains what is involved in solution development to meet customer requirements.

#### Lessons

- Prerequisite Knowledge
- Participants
- Instructors and Rooms
- Seminars

#### Lab : Customize Resource Tables and Pages

- Customize Resource Table
- Customize Resource Card



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- 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

This module explains the purpose and benefits in using documents to enter transactions in Microsoft Dynamics NAV 2013.

#### Lessons

- 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

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- 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

This module explains the posting routine.

##### Lessons

- 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



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- 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

This module explains the integration of custom features into standard functionality to provide a seamless and familiar experience to the users.

#### Lessons

- Prerequisite Knowledge
- Seminar Feature Integration
- Navigate Integration

Lab : Integrating Seminar Features

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- 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

This module explains reporting principles.

##### Lessons

- 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

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## Module 7: Statistics

This module explains the different types of statistics in the standard application.

### Lessons

- 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

This module explains the importance of dimensions and their use throughout the standard application and accompany all transactional data and process.

### Lessons

- Prerequisite Knowledge
- Integrating Seminar Management with Dimensions

### Lab : Integrating with Dimension Management

- Extending Master Data with Dimensions
- Extending Documents with Dimensions



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- 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

This module explains the importance of user roles and profiles in Microsoft Dynamics NAV 2013.

### Lessons

- 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.



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## Module 10: Interfaces

This module explains how interfacing with features or applications outside Microsoft Dynamics NAV is a frequent requirement. It also describes the different types of interfacing features that are present in Microsoft Dynamics NAV. Lessons

- 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

This module explains what web services are and how they are used in Microsoft Dynamics NAV 2013.

### Lessons

- 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





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- 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

This module explains testing practices and presents the test-driven development (TDD) approach followed by Microsoft.

### Lessons

- 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.

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- Demonstrate the debugging process.

## Module 13: Optimizing for SQL Server

This module explains the SQL Server for Microsoft Dynamics NAV 2013.

### Lessons

- 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.



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- 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

This module contains reference information about the case study that is implemented throughout the course.

### Lessons

- 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