

BC400

ABAP Workbench Foundations

COURSE OUTLINE

Course Version: 18

Course Duration:

SAP Copyrights, Trademarks and Disclaimers

© 2020 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. Please see <http://global12.sap.com/corporate-en/legal/copyright/index.epx> for additional trademark information and notices.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors.

National product specifications may vary.

These materials may have been machine translated and may contain grammatical errors or inaccuracies.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP SE or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP SE or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

In particular, SAP SE or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platform directions and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

Typographic Conventions

American English is the standard used in this handbook.

The following typographic conventions are also used.

This information is displayed in the instructor's presentation	
Demonstration	
Procedure	
Warning or Caution	
Hint	
Related or Additional Information	
Facilitated Discussion	
User interface control	<i>Example text</i>
Window title	<i>Example text</i>

Contents

vii Course Overview

1 Unit 1: Flow of an ABAP Program

1 Lesson: Describing the Processing of ABAP Programs

3 Unit 2: ABAP Workbench

3 Lesson: Introducing the ABAP Workbench
3 Lesson: Organizing ABAP Development Projects
3 Lesson: Developing ABAP Programs
3 Lesson: Finalizing ABAP Development Projects

5 Unit 3: Basic ABAP Language Elements

5 Lesson: Defining Elementary Data Objects
5 Lesson: Using Basic ABAP Statements
5 Lesson: Analyzing Programs with the ABAP Debugger

7 Unit 4: Modularization Techniques in ABAP

7 Lesson: Explaining Modularization
7 Lesson: Defining and Calling Subroutines
7 Lesson: Calling Function Modules
7 Lesson: Creating Function Modules
7 Lesson: Describing Business Application Programming Interfaces (BAPIs)
8 Lesson: Calling Methods of Global Classes
8 Lesson: Creating Global Classes and Static Methods
8 Lesson: Using Local Classes

9 Unit 5: Complex Data Objects

9 Lesson: Using Structured Data Objects
9 Lesson: Using Internal Tables

11 Unit 6: Data Modeling and Data Retrieval

11 Lesson: Explaining Data Models
11 Lesson: Retrieving Single Database Records
11 Lesson: Retrieving Multiple Database Records
11 Lesson: Describing Other Aspects of Database Access
12 Lesson: Implementing Authorization Checks

13	Unit 7:	Classic ABAP Reports
13		Lesson: Implementing ABAP Lists
13		Lesson: Implementing Selection Screens
13		Lesson: Implementing Events of ABAP Reports
15	Unit 8:	Screens
15		Lesson: Creating Screens
15		Lesson: Creating Input and Output Fields
15		Lesson: Implementing Data Transport
17	Unit 9:	SAP List Viewer
17		Lesson: Using the SAP List Viewer
19	Unit 10:	Web Dynpro ABAP
19		Lesson: Describing Web Dynpro ABAP
19		Lesson: Implementing Navigation in Web Dynpro
19		Lesson: Implementing Data Transport in Web Dynpro
21	Unit 11:	Program Analysis Tools
21		Lesson: Improving the Quality of ABAP Code with the Code Inspector
23	Unit 12:	ABAP Development Tools for SAP NetWeaver
23		Lesson: Describing ABAP Development Tools for SAP NetWeaver
23		Lesson: Creating an ABAP Project in Eclipse
25	Unit 13:	SAP Standard Software Adjustments
25		Lesson: Adjusting the SAP Standard Software

Course Overview

TARGET AUDIENCE

This course is intended for the following audiences:

- Developer
- Development Consultant
- IT Support
- Project Manager

Lesson 1: Describing the Processing of ABAP Programs

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the SAP NetWeaver Application Server architecture
- Describe the execution of a dialog program by the ABAP runtime system

Lesson 1: Introducing the ABAP Workbench

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the structure of the ABAP Repository
- Use the search tools of the ABAP Repository
- Display ABAP Repository objects with the Object Navigator

Lesson 2: Organizing ABAP Development Projects

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the ABAP development infrastructure
- Create packages

Lesson 3: Developing ABAP Programs

Lesson Objectives

After completing this lesson, you will be able to:

- Create ABAP programs
- Write ABAP programs with the ABAP Editor
- Activate ABAP programs

Lesson 4: Finalizing ABAP Development Projects

Lesson Objectives

After completing this lesson, you will be able to:

- Create transactions
- Release change requests

Lesson 1: Defining Elementary Data Objects

Lesson Objectives

After completing this lesson, you will be able to:

- Compare data types and data objects

Lesson 2: Using Basic ABAP Statements

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the ABAP syntax for basic programming concepts

Lesson 3: Analyzing Programs with the ABAP Debugger

Lesson Objectives

After completing this lesson, you will be able to:

- Analyze values of elementary data objects with the ABAP Debugger

Lesson 1: Explaining Modularization

Lesson Objectives

After completing this lesson, you will be able to:

- Describe techniques of modularization

Lesson 2: Defining and Calling Subroutines

Lesson Objectives

After completing this lesson, you will be able to:

- Modularize using subroutines

Lesson 3: Calling Function Modules

Lesson Objectives

After completing this lesson, you will be able to:

- Use function modules of function groups

Lesson 4: Creating Function Modules

Lesson Objectives

After completing this lesson, you will be able to:

- Create function groups
- Create function modules

Lesson 5: Describing Business Application Programming Interfaces (BAPIs)

Lesson Objectives

After completing this lesson, you will be able to:

- Modularize using BAPIs

Lesson 6: Calling Methods of Global Classes

Lesson Objectives

After completing this lesson, you will be able to:

- Describe object-oriented programming
- Use methods of global classes
- Use instances

Lesson 7: Creating Global Classes and Static Methods

Lesson Objectives

After completing this lesson, you will be able to:

- Create simple global classes and static methods

Lesson 8: Using Local Classes

Lesson Objectives

After completing this lesson, you will be able to:

- Use local classes

Lesson 1: Using Structured Data Objects

Lesson Objectives

After completing this lesson, you will be able to:

- Define structured data objects
- Implement basic ABAP statements for structured data objects
- Analyze structured data objects in debugging mode

Lesson 2: Using Internal Tables

Lesson Objectives

After completing this lesson, you will be able to:

- Define internal tables
- Implement basic ABAP statements with internal tables
- Analyze internal tables in debugging mode

Lesson 1: Explaining Data Models

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the purpose and benefits of data models
- Describe the SAP flight data model
- Explain transparent tables

Lesson 2: Retrieving Single Database Records

Lesson Objectives

After completing this lesson, you will be able to:

- Retrieve single database records

Lesson 3: Retrieving Multiple Database Records

Lesson Objectives

After completing this lesson, you will be able to:

- Implement a SELECT loop
- Implement an array fetch

Lesson 4: Describing Other Aspects of Database Access

Lesson Objectives

After completing this lesson, you will be able to:

- Retrieve client-specific data
- Use database indexes
- Explain the SAP table buffer
- Retrieve data from several database tables
- Identify ways to change data in a database table

Lesson 5: Implementing Authorization Checks

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the authorization concept
- Implement authorization checks

Lesson 1: Implementing ABAP Lists

Lesson Objectives

After completing this lesson, you will be able to:

- Define ABAP list titles and column headers

Lesson 2: Implementing Selection Screens

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the attributes and benefits of selection screens
- Implement options for restricting selections of selection screens

Lesson 3: Implementing Events of ABAP Reports

Lesson Objectives

After completing this lesson, you will be able to:

- Implement the events of ABAP reports

Lesson 1: Creating Screens

Lesson Objectives

After completing this lesson, you will be able to:

- Create screens and understand screen processing

Lesson 2: Creating Input and Output Fields

Lesson Objectives

After completing this lesson, you will be able to:

- Create input and output fields on screens

Lesson 3: Implementing Data Transport

Lesson Objectives

After completing this lesson, you will be able to:

- Implement data transport on screens

Lesson 1: Using the SAP List Viewer

Lesson Objectives

After completing this lesson, you will be able to:

- Describe EnjoySAP controls
- Implement an SAP List Viewer

Lesson 1: Describing Web Dynpro ABAP

Lesson Objectives

After completing this lesson, you will be able to:

- Describe Web Dynpro ABAP

Lesson 2: Implementing Navigation in Web Dynpro

Lesson Objectives

After completing this lesson, you will be able to:

- Implement navigation in Web Dynpro

Lesson 3: Implementing Data Transport in Web Dynpro

Lesson Objectives

After completing this lesson, you will be able to:

- Implement data transport in Web Dynpro

Lesson 1: Improving the Quality of ABAP Code with the Code Inspector

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the Code Inspector
- Use the Code Inspector

Lesson 1: Describing ABAP Development Tools for SAP NetWeaver

Lesson Objectives

After completing this lesson, you will be able to:

- Describe Eclipse-based ABAP development

Lesson 2: Creating an ABAP Project in Eclipse

Lesson Objectives

After completing this lesson, you will be able to:

- Create an ABAP project in Eclipse

Lesson 1: Adjusting the SAP Standard Software

Lesson Objectives

After completing this lesson, you will be able to:

- Explain terms for adjusting the SAP standard software
- Describe options for adjusting SAP standard software
- Describe enhancement types