

## Courses Listed

### Intermediate

- BC100 - Introduction to Programming with ABAP
- SAPTEC - Technology Fundamentals of SAP S/4HANA and SAP Business Suite

### Advanced

- BC400 - ABAP Workbench Foundations
- BC401 - ABAP Objects
- BC402 - Advanced ABAP
- BC405 - Programming ABAP Reports
- BC410 - Programming User Dialogs with Classical Screens (Dynpros)
- BC414 - Programming Database Updates
- BC430 - ABAP Dictionary
- NET310 - Fundamentals of Web Dynpro for ABAP

All available schedules in your selection

## BC414 Programming Database Updates

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC405 Programming ABAP Reports

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## NET310 Fundamentals of Web Dynpro for ABAP

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC410 Programming User Dialogs with Classical Screens (Dynpros)

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC430 ABAP Dictionary

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC401 ABAP Objects

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC402 Advanced ABAP

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC400 ABAP Workbench Foundations

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC100 Introduction to Programming with ABAP

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## SAPTEC Technology Fundamentals of SAP S/4HANA and SAP Business Suite

There are currently no events available for this course. Please feel free to register interest for this course on SAP Training. We will then notify you when a course has been scheduled.

## BC414 - Programming Database Updates

### Course announcements

- This course will prepare you for updating data in the SAP ABAP system

### Goals

- This course will prepare you to:
- The course explains techniques for programming change transactions in the SAP NetWeaver Application Server ABAP environment.

### Audience

- Developer
- Developer Consultant

### Essential

- BC400

### Course based on software release

- SAP NETWEAVER 7.50 ECC608

### Content

- Database Updates with ABAP Open SQL
- Database Updates with ABAP Open SQL
- Database Change Bundling
- Grouping Database Changes
- SAP Locking
- Creating Lock Objects and Lock Modules
- Setting and Releasing Locks
- Working with the Different Lock Modes

- Organization of Database Updates
- Performing Database Changes from Within the Application Program
- Performing Database Changes Using the Update Technique
- Applying Further Features of the Update Technique
- LUWs Across Multiple Programs
- Extending LUWs Across Multiple Programs
- Number Assignment
- Assigning Numbers
- Using Advanced Features of Number Assignment
- Database Change Logging
- Logging Database Changes
- Object Services
- Applying Object Services
- Cluster Tables
- Working with Cluster Tables
- Program-Controlled Program Calls
- Calling Programs Synchronously and Transferring Data Between Them

### Notes

- Courseware available as Flipbook in the Learning Hub

## BC405 - Programming ABAP Reports

### Course announcements

- This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as BC405E.
- This course will prepare you to develop ABAP report programming skills.
- Become familiar with the different list processing techniques
- Gain detail knowledge on selection screens
- Develop ABAP programs using the SAP List Viewer (ALV)
- Acquire knowledge in programming complex database queries and use logical databases to retrieve data from the database

### Goals

- This course will prepare you to:
- Develop reports
- Create selections screens to enter restrictions for the data retrieval
- Implement the retrieval for data stored on one or multiple database tables
- Display data using the SAP List Viewer

### Audience

- Developer
- Developer Consultant

### Essential

- BC400

### Course based on software release

- AS ABAP 7.50
- SAP ECC 6.08

### Content

- Introduction to ABAP Reports
- Using Standard Reports
- Implementing a Simple List
- Selection Screens
- Implementing a Selection Screen
- Implementing Multiple Selection Screens
- Implementing Input Checks and Creating Variants
- Modifying the Selection Screen at Runtime
- SAP List Viewer (ALV) Creation
- Using ALV Functionality
- Preparing the Container Screen for an ALV Grid Control
- Displaying Data using an ALV Grid
- ALV Design
- Programming Layout Variant Functionality in the ALV Grid
- Changing the Layout of the ALV Grid
- Adapting the Appearance of the ALV Grid
- Adapting the ALV Grid Control using the Field Catalog
- ALV Events and Methods
- Handling Events of the ALV Grid Control
- Handling Additional Events of the ALV Grid
- Calling Additional Methods of the ALV Grid
- Implementing Context Menus for the ALV Grid

- Data Retrieval With Logical Databases
- Explaining the Functionality of Logical Databases
- Retrieving Data using Logical Databases
- Using Advanced Functionality of Logical Databases
- Data Retrieval Without Logical Databases
- Reading Data from Multiple Database Tables
- Implementing Aggregate Functions and Grouping in a SELECT Statement
- Implementing HAVING and ORDER BY Clauses in SELECT Statements
- The Call of Other Programs from ABAP Reports
- Calling Programs and Passing Data
- Background Processing
- Performing Background Processing
- ALV Object Model (OM)
- Displaying Data with the ALV Object Model
- Adapting the ALV Object Model Output
- Adapting the Properties of an ALV

## Notes

- Courseware available as flipbook in the Learning Hub

## NET310 - Fundamentals of Web Dynpro for ABAP

### Course announcements

- + This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as NET31E.
- This course will prepare you to develop modern user interfaces using Web Dynpro for ABAP. Web Dynpro for ABAP is one of SAP's UI technologies of choice and this course will show you how to create applications which use all the fundamental concepts in this area.

### Goals

- This course will prepare you to:
- Develop Web Dynpro ABAP-based applications

### Audience

- Developer
- Developer Consultant

### Essential

- BC400 - ABAP Workbench Foundations
- BC401 - ABAP Objects

### Course based on software release

- SAP NETWEAVER 7.50 ECC608

### Content

- Introduction to Web Dynpro
- Outlining the Benefits of Web Dynpro
- Displaying Web Dynpro Component Architecture
- Navigating Between Views
- Creating View Assemblies
- Identifying Web Dynpro Entities and Relationships

- Web Dynpro Controllers
- Outlining Controller Types and Entities
- Web Dynpro Context
- Creating Context Nodes
- Setting Context Node Properties
- Sharing Data Between Controllers with Context Mapping
- Web Dynpro User Interface
- Defining the View Layout
- Controlling UI Element Behavior with Data Binding
- Using Composite UI Elements
- Creating Static Context Menus
- Controller and Context Programming
- Outlining Controller Methods and Attributes
- Accessing the Context at Runtime with Controller Methods
- Adding New Elements to a Context Node
- Implementing Supply Functions
- Internationalization and Messages
- Using ABAP Dictionary Texts and the Online Text Repository (OTR)
- Implementing an Assistance Class
- Reporting Messages



- Value Help, Semantic Help, and Keyboard Access
- Providing Value Help
- Providing Value Selectors
- Providing Semantic Help
- Providing Keyboard Access
- Component Reuse
- Reusing Web Dynpro Components
- Declaring a Component Usage
- Implementing Advanced Aspects of Component Reuse
- Dialog Boxes
- Creating Dialog Boxes
- Adaptation Techniques
- Adapting Web Dynpro Applications
- Configuring Web Dynpro Applications
- Identifying the Available Enhancements for Web Dynpro
- Modifying the Context at Runtime
- Modifying the UI at Runtime
- SAP List Viewer for Web Dynpro ABAP
- Using SAP List Viewer (ALV) in Web Dynpro for ABAP
- Web Dynpro Select Options
- Using Web Dynpro Select Options
- Portal Integration
- Integrating Web Dynpro in the Portal

- Web Dynpro Application Troubleshooting
- Monitoring Web Dynpro Applications
- Debugging Web Dynpro Applications
- Analyzing Applications at Runtime

## Notes

- Course material available as e-book in SAP Learning Hub

## BC410 - Programming User Dialogs with Classical Screens (Dynpros)

### Course announcements

- This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as BC410E.
- This course will prepare you to develop screen-based user dialogues.

### Goals

- This course will prepare you to:
- Explain the user dialog programming model
- Explain User interfaces and Simple Screen Elements
- Understand how to handle errors using navigation and input help
- Describe how to create Subscreens, Tabstrip Controls, Table Controls, Context Menus and Splitter Controls

### Audience

- Developer
- Developer Consultant

### Essential

- BC400

### Course based on software release

- SAP NETWEAVER 7.50 ECC608

### Content

- Introduction to Screen Programming
- Explaining the User Dialog Programming Model
- Introducing Screen Programming
- Creating Screens and Screen Elements
- Modifying Screens at Runtime
- Designing Screen Sequence
- Calling a Dialog Box Dynamical
- The Program Interface
- Explaining User Interfaces
- Setting a GUI Title and a GUI Status
- Simple Screen Elements
- Creating Screen Elements for Output
- Creating Input/Output Fields
- Defining Checkboxes and Radio Button Groups
- Creating Pushbuttons
- Screen Error Handling
- Handling Errors Using Dialog Messages and Field Input Checks
- Handling Errors Using Navigation and Input Help
- Subscreens
- Creating Subscreens

- Tabstrip Controls
- Creating Tabstrip Controls
- Modifying Tabstrip Controls
- Table Controls
- Creating Table Controls
- Modifying Table Controls at Runtime
- Changing Table Controls at Runtime
- Context Menus
- Implementing Context Menus
- Splitter Control
- Implementing Splitter Control

## Notes

- The course BC410 is also suitable for participants who are using a release older than the one specified.
- Dynpros (screens) build SAP's classical UIs. They are used for those dialogs that are displayed in the SAP GUI, and they will continue to be used.
- Since SAP NetWeaver 7.0, the ABAP Web Dynpro programming model is available - see courses NET310 (ABAP Web Dynpro Basics) and NET311 (Advanced ABAP Web Dynpro).
- For Floor Plan Manager see course: NET313.
- Courseware available as flipbook in Learning Hub

## BC430 - ABAP Dictionary

### Course announcements

- This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as BC430E.
- The course discusses the role of the ABAP Dictionary in the SAP system and its scope of functions.

### Goals

- This course will prepare you to:
- To discuss the role of the ABAP Dictionary in the SAP system and its scope of functions.

### Audience

- Developer
- Developer Consultant

### Essential

- BC400

### Course based on software release

- SAP NETWEAVER 7.50 ECC608

### Content

- Introduction to the ABAP Dictionary
- Describing the ABAP Dictionary
- Data Types in the ABAP Dictionary
- Creating Domains and Data Elements
- Creating Flat Structures
- Creating Table Types and Deep Structures
- Creating Type Groups

- Database Tables
- Creating Transparent Tables
- Defining Cluster Tables and Pooled Tables
- Performance During Table Access
- Creating Database Table Indexes
- Setting Up Table Buffering
- Input Checks
- Creating Fixed Values
- Defining Foreign Keys to Perform Input Checks
- Creating Text Tables
- Dictionary Object Dependencies
- Differentiating Between Active and Inactive Dictionary Objects
- Identifying Dependencies with ABAP Dictionary Objects
- Table Changes
- Performing a Table Conversion
- Enhancing Tables Using Append Structures
- Views and Maintenance Views
- Creating Database Views
- Creating Maintenance Views
- Creating View Clusters
- Search Helps
- Creating Search Helps
- Applying Advanced Search Help Techniques

**Notes**

- Courseware available as flipbook in Learning Hub

## BC401 - ABAP Objects

### Course announcements

- This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as BC401E.
- Strengthen your ABAP skills by gaining a full understanding of the use of object-oriented programming techniques, and how to apply them practically in your ABAP applications.

### Goals

- This course will prepare you to:
- Understand the concepts of object-oriented programming
- Develop business applications with ABAP Objects

### Audience

- Developer
- Developer Consultant
- Help Desk / COE Support
- Program / Project Manager

### Essential

- BC400

### Course based on software release

- AS ABAP 7.50
- SAP ECC 6.08

### Content

- Introduction to Object-Oriented Programming
- Explaining the Object-Oriented Programming Model
- Analyzing and Designing with Unified Modeling Language (UML)

- Fundamental Object-Oriented Syntax
- Creating Local Classes
- Creating Objects
- Accessing Methods and Attributes
- Implementing Constructors in Local Classes
- Implementing Class Constructors in Local Classes
- Inheritance and Casting
- Implementing Inheritance
- Implementing Upcasts Using Inheritance
- Implementing Polymorphism Using Inheritance
- Implementing Downcasts Using Inheritance
- Interfaces and Casting
- Defining and Implementing Local Interfaces
- Implementing Polymorphism Using Interfaces
- Integrating Class Models Using Interfaces
- Object-Oriented Events
- Implementing Events in Local Classes
- Implementing Events in Local Interfaces
- Object-Oriented Repository Objects
- Creating Global Classes
- Defining and Implementing Global Interfaces
- Implementing Inheritance in Global Classes

- ABAP Object-Oriented Examples
- Using the ABAP List Viewer (ALV)
- Describing Business Add-Ins (BADIs)
- Global Classes in ABAP Development Tools
- Developing Eclipse-Based ABAP Programs
- Class-Based Exceptions
- Explaining Class-Based Exceptions
- Defining and Raising Exceptions
- Implementing Advanced Exception Handling Techniques
- Unit Testing
- Unit Testing with ABAP Unit
- Object-Oriented Design Patterns
- Implementing Advanced Object-Oriented Techniques
- Implementing the Singleton Pattern
- Implementing Factory Classes Using Friendship
- Implementing Persistent Objects
- Runtime Type Services
- Using Runtime Type Identification (RTTI)
- Creation of a Comprehensive Object-Oriented Application
- Developing a Comprehensive Object-Oriented Application

## Notes

- Courseware available as flipbook in the Learning Hub



## BC402 - Advanced ABAP

### Course announcements

- This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as BC402E.
- In this course, you will acquire in-depth knowledge of the advanced features in ABAP programming and understand how to apply them practically in your ABAP applications.

### Goals

- This course will prepare you to:
- Acquire in-depth knowledge of the ABAP programming language
- Write more robust ABAP programs
- Assess ABAP programming techniques according to performance aspects and develop high-performance programs
- Gain detailed knowledge in ABAP Open SQL
- Develop dynamic ABAP programs

### Audience

- Developer
- Developer Consultant

### Essential

- BC400
- BC401

### Course based on software release

- AS ABAP 7.50
- SAP ECC 6.08

### Content

- ABAP Language Evolution
- Explaining the Difference between Statements, Functions and Expressions
- Describing ABAP Data Types and Data Objects
- Selecting Data from a Single Database Table with Open SQL
- Program Calls and Memory Management
- Calling Programs Synchronously
- Describing the ABAP Runtime and Memory Management
- Using Shared Objects
- Statements, Functions, and Expressions for Simple Data
- Using Numeric Data Types in Arithmetic Expressions
- Understanding Statements for Processing Character Strings and Byte Strings
- Processing Character Strings and Byte Strings Using Functions and Expressions
- Internal Tables
- Using Standard, Sorted, and Hashed Tables
- Using Special Techniques with Internal Tables
- Using Expressions for Internal Tables
- Using Data References and Field Symbols

- Dynamic Programming
- Explaining the Dynamic Programming Techniques of ABAP
- Using Dynamic Statements and Dynamic Calls
- Using Generic Data Types
- Describing Data Types, Data Objects, and Objects at Runtime
- Creating Data Types, Data Objects, and Objects at Runtime
- ABAP Open SQL
- Describing the Technical Background of Database Accesses with Open SQL
- Processing and Aggregating Datasets on the Database
- Implementing Complex WHERE Conditions and Special INTO Clauses
- Using the Features of the New Open SQL
- Selecting Data from Multiple Database Tables
- Explaining Additional Techniques for Reading from Multiple Database Tables
- Analysis and Testing
- Defining and Activating Checkpoints
- Using the ABAP Trace
- Using the SQL Trace
- Using the SQL Monitor

## Notes

- Course material available as flipbook in Learning Hub

## BC400 - ABAP Workbench Foundations

### Course announcements

- This course is also available in a self-paced e-learning format with an active subscription to the SAP Learning Hub, as BC400E.
- Gain a detailed knowledge of the fundamental concepts of ABAP and learn how to comfortably and efficiently work with the ABAP Workbench tools in order to undertake custom developments with confidence

### Goals

- This course will prepare you to:
- Learn the fundamental concepts of the ABAP programming language
- Efficiently use the ABAP Workbench Tools
- Create simple application programs with user dialogs (list, selection screen, screens, Web Dynpro) and database dialogs (reading from the database)

### Audience

- Developer
- Developer Consultant
- Help Desk / COE Support
- Program / Project Manager

### Essential

- BC100 or previous programming language experience

### Course based on software release

- SAP NETWEAVER 7.50 ECC608

### Content

- Flow of an ABAP Program
- Describing the Processing of ABAP Programs

- ABAP Workbench
- Introducing the ABAP Workbench
- Organizing ABAP Development Projects
- Developing ABAP Programs
- Finalizing ABAP Development Projects
- Basic ABAP Language Elements
- Defining Elementary Data Objects
- Using Basic ABAP Statements
- Analyzing Programs with the ABAP Debugger
- Modularization Techniques in ABAP
- Explaining Modularization
- Defining and Calling Subroutines
- Calling Function Modules
- Creating Function Modules
- Describing Business Application Programming Interfaces (BAPIs)
- Calling Methods of Global Classes
- Creating Global Classes and Static Methods
- Using Local Classes
- Complex Data Objects
- Using Structured Data Objects
- Using Internal Tables

- Data Modeling and Data Retrieval
- Explaining Data Models
- Retrieving Single Database Records
- Retrieving Multiple Database Records
- Describing Other Aspects of Database Access
- Implementing Authorization Checks
- Classic ABAP Reports
- Implementing ABAP Lists
- Implementing Selection Screens
- Implementing Events of ABAP Reports
- Screens
- Creating Screens
- Creating Input and Output Fields
- Implementing Data Transport
- SAP List Viewer
- Using the SAP List Viewer
- Web Dynpro ABAP
- Describing Web Dynpro ABAP
- Implementing Navigation in Web Dynpro
- Implementing Data Transport in Web Dynpro
- Program Analysis Tools
- Improving the Quality of ABAP Code with the Code Inspector

- ABAP Development Tools for SAP NetWeaver
- Describing ABAP Development Tools for SAP NetWeaver
- Creating an ABAP Project in Eclipse
- SAP Standard Software Adjustments
- Adjusting the SAP Standard Software

## BC100 - Introduction to Programming with ABAP

### Goals

- Learn simple ABAP code
- Trace the flow of a program and troubleshoot simple problems

### Audience

- Developer
- Developer Consultant
- Help Desk / COE Support

### Essential

- None

### Course based on software release

- SAP NETWEAVER 7.50 ECC608

### Content

- Basics of ABAP Programming
- Developing a Simple ABAP Program
- Introducing ABAP Syntax
- Implementing a Simple Dialog
- Customizing the ABAP Editor
- Coding and Debugging in ABAP
- Defining Simple Variables
- Defining Text Symbols Performing Arithmetic Operations Using Simple Variables
- Using System Variables
- Debugging a Program
- Creating an ABAP List
- Processing Character Strings

- Control Flow Structures in ABAP
- Implementing Conditional Logic
- Implementing Loops
- Runtime Errors and Error Handling
- Analyzing Runtime Errors
- Implementing Error Handling
- Additional ABAP Programming Techniques
- Retrieving Data From the Database
- Describing Modularization in ABAP
- Using Function Modules

### Notes

- The BC400 (ABAP Workbench Foundations) programming courses require that you understand the content of this basic course.

## SAPTEC - Technology Fundamentals of SAP S/4HANA and SAP Business Suite

### Course announcements

- Would you like to understand how SAP systems function?
- This course introduces the technology fundamentals of most SAP applications (incl. SAP S/4HANA and SAP Business Suite), how SAP systems function, as well as an introduction to different user interfaces, such as SAP Fiori or SAP GUI. The training contains hands-on exercises in an SAP S/4HANA system and other SAP applications. The course will also introduce learners to the SAP strategy and provides an overview of cloud topics.
- After completing this course, users will have acquired the fundamental technology knowledge necessary to follow the learning path to their choice of business role ranging from SAP System administrator to developer to user interface expert or to project or program manager.

### Goals

- This course will prepare you to:
- Present in detail the architecture of SAP Application Server. The SAP Application Server is the central component of SAP S/4HANA, and the SAP Business Suite.
- Learn effective techniques for navigating
- Receive an overview of the development process in an SAP system landscape
- Understand the basics of the SAP strategy

### Audience

- System Administrator
- Technology Consultant
- System Architect
- Database Administrator
- Help Desk / COE Support

- Program / Project Manager
- Developer
- Development Consultant

### Essential

- Knowledge of Information Technology

### Course based on software release

- SAP S/4HANA 2021
- ABAP Platform 2021
- AS ABAP 7.56

### Content

- SAP portfolio overview
- SAP systems
- Navigation using SAP Fiori, SAP GUI, SAP Business Client, a web browser
- Explaining the architecture of an SAP system, Application Server (AS) ABAP and Application Server (AS) Java
- Explaining the processes of an AS ABAP and AS Java based SAP system
- Processing user requests in AS ABAP
- Explaining the data structure of an AS ABAP-based SAP system
- Software development in SAP systems
- Communication and integration technologies (RFC, HTTP, and OData)
- Application Lifecycle Management (ALM)
- Describing the maintenance of an SAP system

**Notes**

- SAPTEC examines SAP Application Server and imparts the knowledge that is required for subsequent courses related to the technology of SAP Application Server.
- SAPTEC is the entry point for administration for SAP S/4HANA, and SAP Business Suite.
- SAPTEC is the foundation for curricula like SAP System Administration, ABAP Development, SAP Portal, and SAP Process Integration.



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