

# OutSystems

## Course outline

### **Module 1: Introduction to OutSystems**

Module 1: Introduction to OutSystems is an introductory course designed to provide an overview of the OutSystems platform and its capabilities. It covers topics such as the OutSystems architecture, development environment, and the basics of creating applications. It also provides an introduction to the OutSystems language, and how to use it to create applications.

#### ***Lessons***

- Overview of OutSystems Platform
- Understanding the OutSystems Architecture
- Exploring the OutSystems Studio
- Working with the OutSystems Service Studio
- Creating and Managing Entities
- Working with Data Sources
- Developing User Interfaces
- Working with Logic
- Integrating with External Services
- Deploying and Managing Applications

#### **After completing this module, students will be able to:**

- Understand the fundamentals of OutSystems development, including the OutSystems Platform, Service Studio, and LifeTime.
- Create and deploy a basic OutSystems application.
- Utilize the OutSystems Platform to create and manage data models.
- Use the OutSystems Platform to create and manage user interfaces.

### **Module 2: OutSystems Architecture**

Module 2 of the OutSystems course provides an overview of the OutSystems architecture, including the components of the platform, the development environment, and the deployment process. It also covers the fundamentals of the OutSystems language, such as the data model, the logic, and the UI. Finally, it provides an introduction to the OutSystems mobile platform.

#### ***Lessons***

- Overview of OutSystems Architecture

- OutSystems Platform Server
- OutSystems Application Server
- OutSystems Database Server
- OutSystems Security Model
- OutSystems Deployment Model
- OutSystems Application Lifecycle
- OutSystems Performance Tuning
- OutSystems Scalability
- OutSystems Integration with External Systems

### **After completing this module, students will be able to:**

- Understand the fundamentals of OutSystems architecture and its components.
- Develop an understanding of the OutSystems Platform Server and its components.
- Learn how to design and develop applications using OutSystems.
- Develop the skills to deploy and manage OutSystems applications.

## **Module 3: OutSystems Development Environment**

Module 3 of the OutSystems course provides an introduction to the OutSystems Development Environment. It covers topics such as the development environment, the OutSystems Studio, the OutSystems Service Studio, and the OutSystems Platform Server. It also provides an overview of the development process, including how to create and deploy applications.

### ***Lessons***

- Introduction to OutSystems Development Environment
- Setting up the OutSystems Development Environment
- Exploring the OutSystems Development Environment
- Working with the OutSystems Development Environment
- Debugging and Troubleshooting in the OutSystems Development Environment
- Deploying Applications in the OutSystems Development Environment
- Best Practices for Working in the OutSystems Development Environment
- Security Considerations in the OutSystems Development Environment
- Extending the OutSystems Development Environment
- Automating Tasks in the OutSystems Development Environment

### **After completing this module, students will be able to:**

- Understand the fundamentals of the OutSystems development environment, including the Service Studio, Service Center, and LifeTime.
- Create and deploy applications using the OutSystems development environment.
- Utilize the OutSystems development environment to debug and troubleshoot applications.
- Integrate third-party services and APIs into OutSystems applications.

## **Module 4: OutSystems User Interface Design**

Module 4 of the OutSystems course focuses on user interface design. It covers topics such as creating user-friendly interfaces, designing for mobile devices, and using OutSystems UI components. It also provides hands-on exercises to help students gain practical experience in designing effective user interfaces.

## ***Lessons***

- Introduction to OutSystems UI Design
- Designing Responsive Layouts
- Working with Themes and Styles
- Working with Widgets
- Working with Data Grids
- Working with Lists
- Working with Forms
- Working with Navigation
- Working with Images and Icons
- Working with Animations and Transitions

## **After completing this module, students will be able to:**

- Understand the fundamentals of OutSystems user interface design, including the use of themes, layouts, and components.
- Create and customize user interfaces for OutSystems applications.
- Utilize OutSystems UI components to create a visually appealing and user-friendly interface.
- Implement best practices for designing mobile-friendly user interfaces.

## **Module 5: OutSystems Data Modeling**

Module 5 of the OutSystems course focuses on data modeling. It covers topics such as creating data models, understanding relationships between entities, and using the OutSystems data modeling tools. It also covers advanced topics such as creating custom data types and using the OutSystems data modeling language.

## ***Lessons***

- Introduction to Data Modeling in OutSystems
- Creating Entities and Associations
- Working with Attributes
- Using Aggregates and Aggregate Functions
- Working with Data Sources
- Using Data Actions
- Working with Data Transformations
- Using Data Validation
- Working with Data Security
- Using Data Queries

## **After completing this module, students will be able to:**

- Understand the fundamentals of data modeling in OutSystems
- Create and manage data models in OutSystems
- Utilize the OutSystems data modeling tools to create and maintain data models
- Implement data models in OutSystems applications to store and retrieve data

## **Module 6: OutSystems Business Logic**

Module 6 of the OutSystems course focuses on the fundamentals of OutSystems Business Logic. It covers topics such as creating and managing business rules, using expressions and variables, and creating and managing data structures. It also covers how to use the OutSystems platform to create and manage business logic.

### ***Lessons***

- Introduction to Business Logic
- Working with Entities
- Creating and Using Aggregates
- Working with Business Rules
- Working with Timers
- Working with Business Processes
- Working with Web Services
- Working with Integrations
- Working with Notifications
- Working with Data Transformations

## **After completing this module, students will be able to:**

- Develop and implement business logic using OutSystems
- Create and manage data models and entities in OutSystems
- Utilize OutSystems to create and manage web services
- Implement authentication and authorization in OutSystems applications

## **Module 7: OutSystems Security**

Module 7 of the OutSystems course covers the security features of the OutSystems platform. It covers topics such as authentication, authorization, encryption, and data protection. It also covers best practices for securing applications and data.

### ***Lessons***

- Introduction to OutSystems Security
- Authentication and Authorization
- Data Encryption
- Secure Network Connections

- Secure Data Storage
- Secure Application Deployment
- Security Best Practices
- Security Auditing
- Security Testing
- Security Incident Response

**After completing this module, students will be able to:**

- Understand the security features of OutSystems and how to use them to protect applications.
- Implement authentication and authorization mechanisms in OutSystems applications.
- Configure and manage user roles and permissions.
- Utilize OutSystems security features to protect data and applications from malicious attacks.

## **Module 8: OutSystems Integration**

Module 8 of the OutSystems course covers the fundamentals of integrating OutSystems with other systems. It covers topics such as how to use the OutSystems Integration Studio, how to create and configure integrations, and how to use the OutSystems API to access external data. Additionally, the module provides an overview of the different types of integrations available and how to troubleshoot integration issues.

### ***Lessons***

- Overview of OutSystems Integration
- Connecting to External Systems
- Working with Web Services
- Working with REST APIs
- Working with SOAP APIs
- Working with Database Connectors
- Working with File Connectors
- Working with Email Connectors
- Working with FTP Connectors
- Working with Mobile Connectors
- Working with Social Connectors
- Working with Third-Party Connectors
- Working with Custom Connectors
- Troubleshooting OutSystems Integration Issues

**After completing this module, students will be able to:**

- Understand the fundamentals of OutSystems integration and how to use it to connect different systems.
- Develop integration solutions using OutSystems integration components.
- Create custom integration components to extend OutSystems integration capabilities.
- Troubleshoot and debug integration solutions using OutSystems integration tools.

## Module 9: OutSystems Mobile Development

Module 9 of the OutSystems course focuses on mobile development. It covers topics such as creating mobile applications, designing mobile user interfaces, and deploying mobile applications. It also covers topics such as mobile security, mobile analytics, and mobile performance optimization.

### **Lessons**

- Introduction to OutSystems Mobile Development
- Building Mobile Applications with OutSystems
- Designing Mobile User Interfaces
- Working with Mobile Data
- Integrating with Native Mobile Features
- Debugging and Troubleshooting Mobile Applications
- Deploying and Managing Mobile Applications
- Best Practices for Mobile Development
- Security Considerations for Mobile Applications
- Leveraging Mobile Platforms for OutSystems Development

### **After completing this module, students will be able to:**

- Develop mobile applications using OutSystems
- Understand the fundamentals of mobile development with OutSystems
- Utilize the OutSystems mobile development tools to create user-friendly mobile applications
- Implement mobile-specific features such as push notifications, geolocation, and device-specific features into mobile applications

## Module 10: OutSystems Deployment and Maintenance

Module 10 of the OutSystems course covers the deployment and maintenance of OutSystems applications. It covers topics such as deploying applications to different environments, configuring and managing application servers, and troubleshooting and resolving issues. It also covers best practices for maintaining and monitoring applications.

### **Lessons**

- Overview of OutSystems Deployment and Maintenance
- Preparing for Deployment
- Deployment Strategies
- Automating Deployment
- Managing OutSystems Environments
- Troubleshooting Deployment Issues
- Performance Monitoring and Optimization
- Security Best Practices
- Backing Up and Restoring OutSystems Applications
- Upgrading OutSystems Applications

**After completing this module, students will be able to:**

- Understand the different deployment options available in OutSystems and how to select the most appropriate one for a given project.
- Configure and maintain OutSystems environments, including setting up and managing servers, databases, and other components.
- Monitor and troubleshoot OutSystems applications and environments.
- Automate the deployment process using OutSystems tools and best practices.