

Course : Creating cross-platform mobile applications

Practical course - 4d - 28h00 - Ref. LIJ

Price : 2470 CHF E.T.

NEW

Cette formation s'adresse aux développeurs et chefs de projet ayant des bases en web (HTML, CSS, JavaScript, XML) salariés des branches professionnelles relevant de l'OPCO Atlas. Elle vise à permettre la création d'applications mobiles multiplateformes à partir d'un seul code source. Le programme couvre les principes du développement mobile multiplateforme, la découverte des frameworks courants, la conception d'une application, la création d'interfaces responsives, et les tests multi-appareils.

Teaching objectives

At the end of the training, the participant will be able to:

- ✓ Understand the principles of cross-platform mobile development
- ✓ Discover the most popular mobile development frameworks
- ✓ Designing a mobile application
- ✓ Developing a responsive and interactive user interface
- ✓ Testing the application on different devices

Intended audience

For OPCO Atlas members: developers, project managers.

Prerequisites

Knowledge of the Web, HTML, CSS, JavaScript and XML.

Practical details

Hands-on work

Discussions, practical work.

Teaching methods

To optimize the learning experience, e-learning modules can be provided before and after the classroom session or virtual class, at the participant's request.

Course schedule

PARTICIPANTS

For OPCO Atlas members:
developers, project managers.

PREREQUISITES

Knowledge of the Web, HTML, CSS, JavaScript and XML.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.

Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES

- The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.

- At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.

- A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

HTML and CSS - Creating modern, semantic websites - Content digital

1 learning pre-training

- HTML basics.
- Structure and organize an HTML page.
- Formatting HTML with CSS.
- Use semantic HTML.
- Create HTML forms.

Digital activities

This online training course introduces the basics of HTML and CSS for designing modern websites. Participants will learn how to structure a page with text, media and interactive elements, how to use *id* and *class* attributes, and how to create a first stylesheet. The course also covers semantic HTML and the new features of HTML5, before concluding with the creation of a complete contact form.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

2 A reminder of basic technologies

- Presentation of terminal families: Smartphones, tablets, their specific features.
- HTML, CSS and JavaScript technologies.
- Review of modern development tools (NodeJS, NPM, Bower, Gulp...).
- Introduction to Webkit and Gecko engines...

Hands-on work

Set up the mobile development environment.

3 On-board solutions

- Overview of existing technologies and their development environments: limitations, cost, portability.
- Objective-C and Swift (iPhone, iPad), Java (Android), C#.Net (Windows 10, Xamarin), Tizen, Firefox OS.
- Method of publishing an application in official operator catalogs (Apple Store, Google Play, etc.).
- Administrative procedures (iPhone Developer Program, Certificates...).

Hands-on work

Solving definition puzzles.

4 Differences between traditional web and mobile applications

- Browser differences: JavaScript and CSS engines, plug-in limitations (Flash, PDF...), other specificities.
- Different screen sizes and solutions.
- Hardware differences (CPU, memory).

Hands-on work

End-of-day MCQs.

5 Page structure

- META and specific tags: Viewport and dynamic CSS settings.
- Traditional page construction tags.
- Table construction.
- Links and dedicated accesskey options.
- Images and the importance of images on terminals (format, image weight)
- p and span text. HTML 5 div and canvas blocks.

Hands-on work

Create a mobile first page with Scalable Vector Graphics (SVG) integration and manipulation.

6 Form and CSS

- Forms. New data types (daterange, slider...). Numeric keyboard activation.
- CSS, importance in multi-channel mode. Element positioning, navigation between elements (zindex, display...).
- Bringing CSS3 to HTML5. Simplify CSS creation and maintenance with Bootstrap, Sass, Compass and Less.
- Importance of DOM for multi-terminal porting.

Hands-on work

Implement an input form, buttons and components, and rotate the terminal using CSS.

7 Events and protocols

- Mobile environment (sensors, battery, network detection, etc.).
- Terminal-specific multitouch events (gesture, touch, drag & drop, etc.).
- Communication protocols (WebSocket, Ajax), advantages of Node.js.
- Graphics library: drawing API (rectangle, line...), color palette, image manipulation.
- W3C compliance testing: validation tools.

Hands-on work

Setting up a WebSocket server with Node.js. Network outage detection.

8 Overview of cross-platform frameworks

- Advantages of using a framework.
- Choosing a mobile framework.
- Capacitor (Cordova) and its publishing tools.
- Angular, a framework for mobile development.
- Ionic, building native applications with Capacitor and Angular.

Hands-on work

Implement and discover the different frameworks available on the market.

9 Implementation with Ionic

- Creating a project.
- Integration with Android Studio and Xcode.
- Plug-in creation.
- Debug a multiplatform application.
- Push notifications.
- Material Design frameworks (Polymer, Materialize CSS...).

Hands-on work

Create a mobile project with Ionic and Material Design, integrate Capacitor and generate a multi-OS application.

10 Data storage on the mobile

- Set up a strategy "disconnected mode".
- Manifest and caching of mobile site resources.
- Browser-integrated SQLite and indexedDB databases.
- SQL language and administration tools.
- JavaScript management and control (table creation, queries, etc.).
- Use of Google Gears for non-HTML 5 devices.
- Client-side cache management for offline work (localStorage, sessionStorage).

Hands-on work

Create a note manager with storage in the embedded database.

11 Cartography and geolocation

- Google Maps management.
- Options to support mobile geolocation.

Hands-on work

Display the map in relation to the mobile's location and display ded markers on the map.

12 Testing and deploying a mobile application

- Test on simulator.
- Test and deploy on mobile devices.
- Deploy on Google Play.
- Deploy on App Store.
- CI/CD integration.

Hands-on work

Test and deploy on simulators and mobiles. Deployment procedures on blinds.

13 Kotlin - Les bases indispensables - Post-training digital learning content

- Introducing Kotlin.
- Kotlin fundamentals.
- Functions.
- Coroutines.
- Object-oriented programming.
- Android development.
- Native development.
- JavaScript development.
- Server-side development.

Digital activities

This online training course presents the Kotlin language, its fundamentals, its various functions, the notion of coroutine, object-oriented programming with a demonstration of developing an application in Android Studio, how to use Kotlin for native or server-side development and how Kotlin can generate JavaScript code.

Dates and locations

REMOTE CLASS

2026: 31 Mar., 23 June, 6 Oct., 15 Dec.