

## Node.js

**Level:** medium

**Length:** 28 hours

**Who can attend:** JavaScript programmers that need an introduction to Node.js and the server-side JavaScript programming

**Required infrastructure:** VGA projector, whiteboard, personal computer connected to Internet

**Course objectives:** getting used to Node.js and the particularities of JavaScript server-side programming.

**Prerequisites:** basic knowledge regarding Internet: browsers, web servers, HTTP protocol, HTML, CSS, Javascript client-side programming, databases

**Related courses:** Web Technologies - HTML, CSS, JavaScript & JQuery, Building Web Applications with Apache, PHP & MySQL, Introduction to Linux

### Description:

Since the beginning, Node.js has seen steady growth in popularity. Occupying a well-defined niche in server-side programming, perhaps its popularity will continue to grow.

The course aims to familiarize students with the particularities of server-side JavaScript programming and explore the features that Node.js brings.

The course is highly practical, with sample applications for every subject that gets studied.

### Bibliography:

- Beginning Node.js (1st edition), 2014, Basarat Syed, Apress
- Node.js Design Patterns, 2014, Mario Casciaro, Packt Publishing



## Content:

- Introduction to Node.js
- Working principles of a web server
- V8 Chrome, browser and server
- Platform installation
- Browser and command line Node.js console
- Global objects
- EcmaScript 6 / Harmony
- Synchronous vs. Asynchronous Processing
- Capturing and processing events
- Processing errors
- The notion of "Callback Hell" and solutions
- Application modularization
- Modules advantages
- Module creation
- Node modules, NPM utility
- Using published modules
- HTTP module
- Fs module
- BodyParser module
- Express module
- Connecting to a database server
- Automatic error checking, jshint and jslint modules
- WebSockets with Node.js