

Course Basic Information:

Course duration:	20 weeks course / 800 hours
Course modality:	Full time
Course days and times:	Monday to Friday from 09:00 to 17:00.
Instructors:	Javier Mora and Raül Martínez
Course web page:	ubiquum.com/courses/java-web-developer
Languages:	Content is in English Mentors can speak English/Spanish/Catalan.
Location:	Barcelona

What you'll learn:

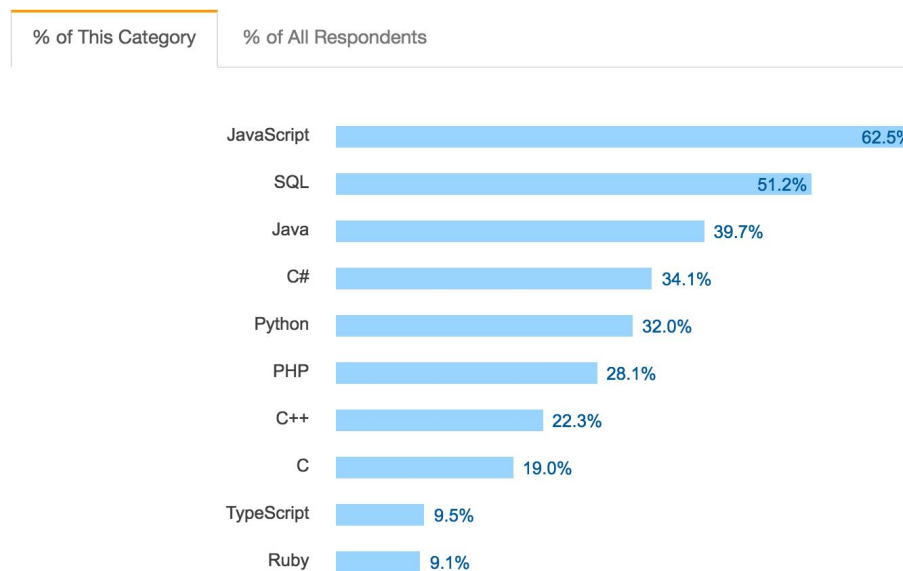
	<u>Module 1</u>	<u>Module 2</u>	<u>Module 3</u>	<u>Module 4+5</u>
	New York Soccer League website	Congressional tracking web site	Module 3 Responsive Design	Battleships Mobile Game
TECH	HTML · CSS · Agile	Javascript · JQuery · AJAX, JSON · RESTful APIs · GIT	CSS media queries · Firebase · Bootstrap	Java · Angular · Spring Boot · Test Driven Development · SQL

Course Description:

Web servers form the backbone of the Internet. When you use web apps or most native mobile apps, they use web servers so that you can save data, communicate with other users, search the web, and many more activities that need computational power, persistent data storage, and network bandwidth.

Web servers can be implemented in many languages, including Python, PHP, Ruby on Rails, and Java. Java is particularly common for large web sites, and in fact, Java remains the most popular programming language in the world. It is also the language used to create native Android apps. Note that in this program, you will be learning Java in combination with Javascript on the front-end.

Programming Languages



Web server development typically involves writing front-end code that runs on mobile apps and web pages, and back-end code that runs on the web server.

In this course, you will learn how to develop a modern web application using HTML, CSS, and JavaScript to handle all the user interface presentation aspects, and a Java RESTful web service to handle multi-user access and communication, store persistent data and implement complex business logic.

Course Objectives:

This program was designed by experts in software development to ensure that the projects and their component tasks reflect real challenges that arise during the development of modern web applications using Java.

Upon completion of this program, you will be able to:

- Write jQuery code, one of the most popular and in-demand JavaScript libraries for building dynamic web interfaces.
- Program in Java using concepts common to all modern programming languages, including variables, functions, loops, strings, arrays, complex data structures, classes, files and databases
 - Use the Spring Boot suite of tools to create and test sophisticated Java-based web services.
 - Implement a RESTful interface to the a server
 - Use JSON data structures to send data, not HTML, to and from a mobile or desktop application.

This Java Program will equip you with the necessary skills and knowledge to work as a back-end developer and to pursue more advanced study. You will also build a portfolio of professional-quality project work along the way.

Course Pre-requisites:

- Basic to Intermediate writing and reading in English.
- Some experience in developing web applications using HTML, CSS, and JavaScript is appreciated but not required.

Course Grading:

Grades will be determined from:

- attendance (40%)
- programming exercises and deliverables at the end of every task (40%)
- and final presentation (20%)

Evaluation scheme is subject to change with a prior notice. Attendance will be checked regularly. Missing classes frequently will automatically drop student out of class.

Per our methodology there will be no exams and no master lessons. The student is committed to attend to class and work on their assigned tasks and deliver them via our online platform according to the program schedule.

Course Details:

Module 1: Introduction to Website Development

Week 1-2

In this module, you are an independent contractor who develops custom websites for small organizations. The Northside Youth Soccer League (NYSL) has hired you to develop a website for their soccer teams. You will work on this website on your own and will learn to use modern HTML and CSS to produce an attractive, informative multi-page website based on the client's requirements.

You will learn to:

- Create a multipage website using HTML5
- Control the look of a website using CSS
- Format a web page to display complex information

- Add graphical elements and maps to a website
- Implement web forms to capture user input
- Test a website for compliance with standards and to ensure that it works with a range of browsers.

Module 2: Javascript

Week 3-4

In this module, you are a developer at Code of the Web, a small software shop that creates custom JavaScript-based web applications. Transparent Government in Fact (TGIF), a non-partisan non-profit organization working to increase the public's involvement in government, has hired you to develop a Congressional tracking web site for them. You will work on this web application using modern JavaScript technologies, including Bootstrap, JQuery, AJAX, JSON, and RESTful APIs.

You will learn to:

- Program web applications in JavaScript
- Develop and code algorithms
- Test and debug JavaScript code
- Use JavaScript libraries to implement user interface functionality
- Access and display data
- Use APIs to access third-party resources.

Module 3: Introduction to Responsive Designs and Mobile web applications

Week 5-7

In this module, the Northside Youth Soccer League (NYSL) hired you to create an app to give their players and parents easy on-the-go access to the league's game schedules. To avoid the

hassles of native apps, they would like this to be a mobile web app. You will design and develop the mobile web app, and will add features to the app that are specific to mobile devices, such as location-based features so parents can see where they are in relation to the soccer field. To do this, you'll work through a series of tasks designed by experts in programming and mobile web app development to help you create a robust and useful mobile web application.

You will learn to:

- Understand the landscape and portrait different designs to maximize the user experience.
- Create media queries on CSS.
- Use Firebase and jQuery to add UI elements to improve designs.

Module 4: Java I

Week 8-11

In this module, you will immerse in the back-end world of Java to implement the core architecture of the game by doing:

- A small Java back-end server to store Salvo game data, and send that data to client apps via a RESTful API.
- A front-end browser-based game interface that graphically shows players the state of the game, including ships they have placed, damage sustained, and scores.

You will learn how to develop a modern web application using HTML, CSS, and JavaScript to handle all the user interface presentation aspects, and a Java RESTful web service to handle

multi-user access and communication, store persistent data and implement complex business logic. More specifically, you'll learn how to:

- Use JavaScript and the jQuery library to
 - get and receive data from a web service using AJAX
 - construct HTML displays using templates
- Use Java and the Spring Boot suite of tools to
 - implement a RESTful API to both the database and application services
 - apply modern-day Java programming concepts, such as lambdas, streams, dependency injection
- Use JavaScript Object Notation (JSON) data structures to
 - communicate between your application's JavaScript front-end and Java back-end
 - implement the "model" in a model-view-controller

Module 5: Java II

Week 12-16

In this last module of the course, you will implement additional back-end functionality and implement the algorithms needed for the game engine and support game play so that:

- Players can create new games and join games that others have created.
- When a game has both players, players can place their ships on their grids.
- When ships have been placed, players can begin trading salvos (shots) and seeing the results (hits, sinks, and misses).
- When all of a player's ships have been sunk, the game ends and the winner is added to the leaderboard.

Employment Services

Week 14-16	<p>Professional services work on two main areas. On the one side we provide skill coaches to improve your interview and interpersonal skills.</p> <p>On the other side we provide 1:1 consultation to improve your CV, LinkedIn profile, hook it up with GitHub and finally connect you with companies looking to hire in Barcelona.</p> <p>If you have time, the mentors will support you on your own personal projects and run extra workshops on Node.JS, SQL and Python as well as some PHP for the very adventurous.</p>
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Designed by:

Dr. Ray Bareiss

Dr. Bareiss holds a Doctorate in Computer Sciences and is a graduate in Communication from the University of Texas at Austin. He is a specialist in computer learning environments. Dr. Bareiss has led professional programmes based on the learning-by-doing methodology at the Carnegie Mellon Silicon Valley Campus. As the co-founder of the Cognitive Arts Corporation, he has been involved in large scale strategic eLearning projects.

Dr. Chris Riesbeck

Doctor in Computer Science from Stanford University, Associate Professor in the Department of Electrical Engineering and Computer Science at Northwestern University. He is a specialist in case-based reasoning, memory-based language understanding, and intelligent interfaces for knowledge acquisition and teaching.

Programme methodology:

This programme is based on Story Centered Curriculum (SCC) methodology. This involves advanced simulation techniques of real situations. There are no theoretical classes or rote learning study sessions to pass exams. SCC puts you in a motivating scenario based on a real professional situation in which you perform the same tasks as actual professionals, using the same tools, meaning that you can fit easily into a real work team when the time comes.

You will be working in a team, as is usually the case in the world of work. A comprehensive range of supporting material and the help needed to complete the tasks are available on-line. You will be supervised by a tutor, who is always available to answer any questions or clear up any doubts, and who will assess your performance and advise on the project "deliverables".

SCC is an educational methodology that enables us to offer a learning-by-doing approach in all its complexity and scope. This methodology has been successfully used for more than 10 years at the Pittsburgh and Mountain View, California campuses of the Carnegie Mellon University in the USA, where many students have completed programmes developed using this methodology.

Tutors:

At the start of the course you are assigned a tutor who is a professional expert. The tutor will foster teamwork and promote discussion of issues, helping you find solutions and resolve the difficulties of the project by drawing on your own resources.

They will give you feedback on the "deliverables" for each project at every stage, so that you can continually refine them, learning from your mistakes and achieving the mastery needed for each task.