# Introduction to Programming for App Development

| Tutor | Stefano Balietti, Mannheim University and Heidelberg University |
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| **Organization** | Digital Skills, University of Lucerne |
| **Language** | English |
| **ECTS-Points** | 2 |
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| **Dates and time** | Nov 11/12/18/19 from 12PM-16PM |
| **Content** | **Intro**<br><br>In this applied course, participants will learn the fundamentals of modern computer programming, with a focus on web technologies. It combines interactive lectures with exercises that students can do at their own pace and as well with the supervision of the tutor.<br><br>The operative language of the course is JavaScript, one of the most popular and dynamic languages, currently number 1 on GitHub (https://github.com/) for pull requests.<br><br>This course is targeting beginners and complete beginners in computer programming, and the learning speed and materials covered will be adapted to the level of the participants.<br><br>This course is preparatory for the more advanced seminar "App Development" in the next semester, however participation in the "App Development" course is completely optional.<br><br>**Format**<br><br>The course consists in online lectures with videos and exercises/materials. |

Lectures will be carried out in a dedicated Discord channel, where students are encouraged to ask questions and posts comments throughout the duration of the course.

## Syllabus

The course is made of 5 modules, as shown below. Modules marked with an asterisk contain some advanced concepts that may be skipped depending on the interest and the level of participants.

### Module 1: Setup
- Intro: What is computer programming?
- Setting up the environment: Node.JS, Git, Github, and a modern Text Editor
- A gentle introduction to JavaScript

### Module 2: Programming Fundamentals in JavaScript
- Variables, primitive types, operators, and conditional logic
- Objects, arrays, and loops
- Functions
- Catching Errors

### Module 3: Advanced Programming Concepts *
- Object oriented programming
- Classes, objects, interfaces, and inheritance
- Collaborative coding: Pull Requests, merging contributions and issues tracking

### Module 4: The Browser as a programming environment
- Designing interfaces: HTML and CSS
- Programming behavior: Event-driven async programming
- The DevTools
- Debugging your code in the browser

### Module 5: Node.JS and Web Apps *
- Node.JS applications
- The node.js package manager NPM
- Debugging your code
- Running a local HTTP server
- What is an App? What to expect in the advanced course