Reskill Americans
Syllabus Summary – March 2021

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Reskill Americans is offering a tuition-free 7-month software development program. The following is a summary of the expected content and skills that will be covered.

A more detailed curriculum will be provide by our training partner, HNG Tech during the first weeks of the course.

Structure

 We offer four tracks from which participants can choose a specialization: Front-End, Back-End, Mobile, UI/UX. Our (online) training is divided into 3 phases:

1. Traditional "classroom" - concepts and practice [2 months]
2. Project-based learning (may be individual or group) [2 months]
3. Virtual Internship (working in a simulated remote-team environment to complete a "product" development cycle) [3 months]

What follows are the list of skills we expect our graduates to have attained by the end of the program.

All Coding Tracks

Our training course has no pre-requisites. We begin with basic computer programming concepts and work up to more advanced ones.

1. Code structure, variables, expressions, conditionals, functions, loops, strings, arrays, maps/objects
2. Classes and types
3. Object oriented programming (encapsulation, inheritance, polymorphism, abstract classes and interfaces)
4. Data structures, trees, recursion

5. Exception handling

Our participants will be introduced to and immersed in the software development life cycle:

1. Source control using git and GitHub
2. Coding standards and style guides
3. Debugging
4. Code reviews
5. Introduction to unit testing
6. IDE use (one of Visual Studio Code/Flutter/Android Studio)
7. Issue Tracking practices (Asana or GitHub)

All participants are taught the foundation of internet technologies:

1. TCP/IP
2. DNS and HTTP requests/responses
3. RESTful interfaces
4. Web hosting
5. Building a web site/portfolio using GitHub pages

Front-End Track

Our front-end training provides all of the skills needed to create and maintain web sites and web applications:

1. HTML, CSS, Flexbox, Grid
2. JavaScript
    a. Promises, Ansyc/Await
3. DOM, local storage, cookies
4. Cache implications and optimization
5. Minification and build tool chain
6. Responsive design
7. React
8. Use and familiarity with design tools and working with UI/UX designers using Figma.

Back-End Track

Participants in the back-end track can choose either a Python, Node.js or PHP sub-track:

1. Node.js [JS]
2. Request/Response async programming.
3. Promises, Ansyc/Await [JS]
4. Express.js [JS]
5. MongoDB and MySQL
6. Sendmail
7. Authentication
8. Access controls
9. Django [Python]
10. Laravel [PHP]

Mobile Track

Mobile track participants can choose between cross-platform development in Flutter or Android development in Java or Kotlin.

1. Android Studio installation and use
2. Layouts
3. Material design
4. Notifications
5. Local storage/database use
6. REST programming

UI/UX Track

The UI/UX track is not a programming track. Instead, participants learn the foundations of application design, usability, and how to communicate with developers.

1. Discoverability and predictability
2. Conveying state through design
3. Use of color

4. Prototyping and testing
5. Designing for mobile vs. Web
6. IOS and Android design distinctions