This Course Collection provides learners with the skills needed to develop compelling web sites and web apps.

Who this is for
Software engineers looking to transition to web development, or anyone interested in web development.

COURSES INCLUDE:
- Front-End JavaScript Frameworks: Angular
- Multiplatform Mobile App Development with Web Technologies: Ionic and Cordova
- Ruby on Rails: An Introduction
- Rails with Active Record and Action Pack
- Ruby on Rails Web Services and Integration with MongoDB
- Introduction to HTML5
- Introduction to CSS3
- Interactivity with JavaScript

This Course Collection features courses from the University of Michigan, the Hong Kong University of Science and Technology, and John Hopkins University.
This course concentrates mainly on Javascript based front-end frameworks, and in particular the Angular framework. This course will use Typescript for developing Angular application. Typescript features will be introduced in the context of Angular as part of the exercises. You will also get an introduction to the use of Angular Material and Angular Flex-Layout for responsive UI design.

**SKILLS ACQUIRED**
- Angularjs
- Typescript
- Node.Js
- Web Development
- Representational State Transfer

**DESCRIPTION**

This course concentrates mainly on Javascript based front-end frameworks, and in particular the Angular framework. This course will use Typescript for developing Angular application. Typescript features will be introduced in the context of Angular as part of the exercises. You will also get an introduction to the use of Angular Material and Angular Flex-Layout for responsive UI design.

**TOPICS**
- Front-End JavaScript Frameworks Angular
- Angular Services, Routing and Single Page Applications
- Angular Forms, Angular and Reactive JavaScript
- Client-Server Communication

**PRACTICE**
- Quizzes: 0
- Peer-Reviewed Assignments: 7
- Programming Assignments: 0

**TIME**
- ~30.2 hours total
- ~18 hours of video
- ~12 assignment hours

**SPECIALIZATION**
- Full Stack Web and Multiplatform Mobile App Development

**RATING**
- 4.8 out of 5 stars

**TAUGHT BY**
- Jogesh K. Muppala
  - Associate Professor, Department of Computer Science and Engineering
Web Development

SKILLS ACQUIRED

- Ionic (Mobile App Framework)
- Angularjs
- Xamarin
- Javascript

Multiplatform Mobile App Development with Web Technologies

DESCRIPTION

This course focuses on developing multiplatform mobile applications using the Web technologies (HTML5, CSS and Javascript). In particular we make use of the Cordova hybrid application framework to develop and target multiple mobile platforms with a single codebase.

TOPICS

★ Hybrid Mobile App Development Frameworks
★ Ionic Components
★ Ionic Split Pane, Grid and Storage, and Deploying your App
★ Accessing Native Capabilities of Devices: Cordova and Ionic Native

PRACTICE

- Quizzes: 0
- Peer-Reviewed Assignments: 7
- Programming Assignments: 0

SPECIALIZATION

- Full Stack Web and Multiplatform Mobile App Development

RATING

- 4.8 out of 5 stars

TIME

- ~21.6 hours total
- ~12.3 hours of video
- ~9.3 assignment hours

TAUGHT BY

Jogesh K. Muppala
Associate Professor, Department of Computer Science and Engineering
SKILLS ACQUIRED

- Ruby On Rails
- Ruby (Programming Language)
- Heroku
- Github
- Rspec

DESCRIPTION

Did you ever want to build a web application? Perhaps you even started down that path in a language like Java or C#, when you realized that there was so much “climbing the mountain” that you had to do? In this course, we will explore how to build web applications with the Ruby on Rails web application framework, which is geared towards rapid prototyping.

TOPICS

- Welcome and Setting Up the Development Environment
- Introduction to Ruby
- Introduction to Ruby on Rails

PRACTICE

- 1 Quiz
- 0 Peer-Reviewed Assignments
- 2 Programming Assignments

SPECIALIZATION

Ruby on Rails Web Development

RATING

4.5 out of 5 stars

TIME

- ~14.3 hours total
- 4.8 hours per week
- ~6.1 hours of video
- ~3 assignment hours

TAUGHT BY

Kalman Hazins
Adjunct Professor, Graduate Computer Science
SKILLS ACQUIRED
- Ruby On Rails
- Active Record Pattern
- Authentication
- Authorization
- Database

DESCRIPTION
You already know how to build a basic web application with the Ruby on Rails framework. Perhaps, you have even taken Course 1, "Ruby on Rails: An Introduction" (we highly recommend it) where you relied on external web services to be your “data layer”. But in the back of your mind, you always knew that there would come a time when you would need to roll up your sleeves and learn SQL to be able to interact with your own rel...

TOPICS
★ Introduction to Active Record
★ Deep Dive into Active Record
★ Introduction to Action Pack
★ Security and Nested Resources in Action Pack

TAUGHT BY
Kalman Hazins
Adjunct Professor, Graduate Computer Science

SPECIALIZATION
Ruby on Rails Web Development

RATING
4.7 out of 5 stars ★★★★★

TIME
~15.1 hours total
~5.6 hours of video
~1.7 assignment hours

PRACTICE
0 Quizzes
0 Peer-Reviewed Assignments
4 Programming Assignments
Ruby on Rails Web Services and Integration with MongoDB

DESCRIPTION
In this course, we will explore MongoDB, a very popular NoSQL database and Web Services concepts and integrate them both with Ruby on Rails. MongoDB is a used to handle documents with a pre-defined schema which will give the developers an ability to store, process and use data using it's rich API.

SKILLS ACQUIRED
- MongoDB
- Web Service
- Ruby On Rails
- NoSQL
- Debugging

TOPICS
- ★ Introduction to MongoDB, MongoDB-Ruby API, and CRUD
- ★ Aggregation Framework, Performance, and Advanced MongoDB
- ★ Mongoid
- ★ Web Services

PRACTICE
- Quizzes: 0
- Peer-Reviewed Assignments: 0
- Programming Assignments: 4
Introduction to HTML5

Thanks to a growing number of software programs, it seems as if anyone can make a webpage. But what if you actually want to understand how the page was created? This course is designed to help the novice who wants to gain confidence and knowledge.

SKILLS ACQUIRED
- HTML5
- HTML
- Web Design
- Web Accessibility
- Web Development

TOPICS
- The Mystery of the Internet
- Jumping into Coding
- Validation and Accessibility

PRACTICE
- 4 Quizzes
- 0 Peer-Reviewed Assignments
- 0 Programming Assignments

TIME
- ~7.9 hours total
- 2.6 hours per week
- ~3 hours of video
- ~4.3 assignment hours

TAUGHT BY
Colleen van Lent
Lecturer
Introduction to CSS3

DESCRIPTION

The web today is almost unrecognizable from the early days of white pages with lists of blue links. Now, sites are designed with complex layouts, unique fonts, and customized color schemes. This course will show you the basics of Cascading Style Sheets (CSS3). The emphasis will be on learning how to write CSS rules, how to test code, and how to establish good programming habits.

SKILLS ACQUIRED

- Cascading Style Sheets
- Web Design
- Style Sheets
- Web Development
- HTML

TOPICS

★ Getting Started with Simple Styling
★ Advanced Styling
★ Psuedo-classes, Psuedo-elements, Transitions, and Positioning
★ Putting It All Together

PRACTICE

- 3 Quizzes
- 3 Peer-Reviewed Assignments
- 0 Programming Assignments

TIME

- ~14.8 hours total
- ~3.7 hours per week
- ~6 assignment hours

SPECIALIZATION

Web Design for Everybody (Basics of Web Development and Coding)

RATING 4.8 out of 5 stars

TAUGHT BY

Colleen van Lent
Lecturer

Link to course
Interactivity with JavaScript

DESCRIPTION
If you want to take your website to the next level, the ability to incorporate interactivity is a must. But adding some of these types of capabilities requires a stronger programming language than HTML5 or CSS3, and JavaScript can provide just what you need.

SKILLS ACQUIRED
- Javascript
- Web Development
- Interactivity
- Document Object Model
- Web Design

TOPICS
- Introduction to JavaScript
- Reacting to Your Audience
- Arrays and Looping
- Validating Form Data

PRACTICE
- Quizzes: 2
- Peer-Reviewed Assignments: 2
- Programming Assignments: 0

TIME
- Hours total: ~2.5
- Hours per week: ~3.4
- Hours of video: ~3
- Assignment hours: ~10

SPECIALIZATION
Web Design for Everybody (Basics of Web Development and Coding)

RATING 4.6 out of 5 stars ★★★★★

TAUGHT BY
Colleen van Lent
Lecturer