Intro to Programming Nanodegree Syllabus

Contact Info

While going through the program, if you have questions about anything, you can reach us at ipnd-support@udacity.com. For help from Udacity Mentors and your peers visit the Udacity Classroom.

Nanodegree Program Info

Learn the basics of programming through HTML, CSS, and Python. Explore possible programming paths with our final project selection. Get confident in your ability to think and problem-solve like a programmer. Be primed and ready for our career-ready programs after mastering these projects.

Prerequisite Skills

A well-prepared learner is able to:

- Experience using the web, being able to perform a search on Google, and (most importantly) the determination to keep pushing forward

Required Software

- Python 3.6
- pip
- GIT bash 2.23 or latest

Version: 8.0.0

Length of Program: 98 Days*

* This is a self-paced program and the length is an estimation of total hours the average student may take to complete all required coursework, including lecture and project time. Actual hours may vary.

Part 1: Welcome and Orientation

Welcome to the Introduction to Programming Nanodegree program. This is your first step on your journey to become a programmer. Learn what this program is all about as well as how to find support along your learning journey.

Part 2: Intro to HTML

Part 3: Intro to CSS

Learn how to add CSS, divs, spans, classes, and ids to your page. CSS allows you to create the aesthetics that all web users enjoy when browsing the web.

Project: Animal Trading Cards

Use your knowledge of HTML and CSS to create a web-based trading card depicting your favorite animal.

Supporting Lessons

Lesson	Summary
Styling with CSS	Learn how to add style to your website by using Cascading Style Sheets (CSS).

Part 4: Intro to Python, Part 1

Learn Python, a versatile programming language, to build your skills as a developer. In this first part, you will use Python statements and functions to draw colorful designs on the screen.

Part 5: Shell Workshop

The Unix shell is a powerful tool for developers of all sorts. In this lesson, you'll get a quick introduction to the very basics of using it on your own computer.

Part 6: Intro to Python, Part 2

Learn Python, a versatile programming language, to build your skills as a developer. In this second part, you will install Python on your computer, and learn to work with textual data in strings.

Project: Adventure Game

Demonstrate your Python skills by coding a simple version of an old-fashioned text-based adventure game.

Supporting Lessons

Lesson	Summary
Python at Home	Install Python on your own computer so you can write code anytime!
Strings & Lists, Part 1	Learn to work with strings and lists in your Python code.
Strings & Lists, Part 2	Expand your understanding of strings and lists, and learning how to use a new kind of loop.
Style & Structure	Get practice writing longer programs, and improving their structure and style.

Part 7: Intro to Python, Part 3

Learn Python, a versatile programming language, to build your skills as a developer. In this third part, you will use Python to work with files on your computer's disk, as well as learning the fundamentals of Object-Oriented Programming with classes and methods.

Part 8: Intro to JavaScript

Learn the history of JavaScript and how it compares to Python programming. Understand how the DOM is formed, what Nodes and Elements are, and how to select items from the DOM. By the end, you'll write JavaScript code that lets the user to create a grid of squares representing their design, and apply colors to those squares to create a digital masterpiece.

Project: Pixel Art Maker

Create a single-page app in JavaScript where the user can create artistic designs!

Supporting Lessons

Lesson	Summary
What is JavaScript?	Learn the history of JavaScript and start writing your code immediately using the JavaScript console.
Data Types & Variables	Learn to represent real-world data using JavaScript variables, and distinguish between the different data types in the language.
Conditionals	Learn how to add logic to your JavaScript programs using conditional statements.
Loops	Harness the power of JavaScript loops to reduce code duplication and automate repetitive tasks.
Functions	Dive into the world of JavaScript functions. Learn to harness their power to streamline and organize your programs.
Arrays	Learn how to use Arrays to store complex data in your JavaScript programs.
Objects	Meet the next JavaScript data structure: the Object. Learn to use it to store complex data alongside Arrays.
The Document Object Model	The Document Object Model (DOM) allows developers to interact with and control the rendered page. You'll learn how the DOM is formed, what Nodes and Elements are, and how to select items from the DOM.
Creating Content with JavaScript	Static is boring, so we'll use JavaScript and DOM methods to create new page content, update existing content, and delete content. You'll also learn how to check and set the styling of page elements.
Working with Browser Events	Hundreds of events fire every time you interact with a page. Learn what an event is, how to listen for an event and respond to it, what data is included with an event, and the phases of an event.

Part 9: Career Services

These Career Services will ensure you make meaningful connections with industry professionals to accelerate your career growth - whether looking for a job or opportunities to collaborate with your peers. Unlike your Nanodegree projects, you do not need to meet specifications on these Services to progress in your program. Submit these Career Services once, and get honest, personalized feedback and next steps from Udacity Career Coaches!

Project: Improve Your LinkedIn Profile

Find your next job or connect with industry peers on LinkedIn. Ensure your profile attracts relevant leads that will grow your professional network.

Supporting Lessons

Lesson	Summary
Industry Research	You're building your online presence. Now learn how to share your story, understand the tech landscape better, and meet industry professionals.

Project: Optimize Your GitHub Profile

Other professionals are collaborating on GitHub and growing their network. Submit your profile to ensure your profile is on par with leaders in your field.

Part 10: Congratulations! What's next?

Great work finishing the program! Here's some info on next steps in your programming journey.

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