

# Computer Science Technopreneurship/Python/HTML5 App Development/Software Development Courses

## Technopreneurship: From Pitch to Prototype

NOTE: The below videos are stand-alone videos are incorporated into the Technopreneurship Course OneNote. They are intended for use in conjunction with the instructor-led course materials. These videos are not intended for self-paced training alone. The Technopreneurship Course OneNote is available for MSIA members to download from the Curriculum Download Center on the MSIA Member Site.

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## Videos

Unit	Lesson #	Title	Video
1	1	About this Course	<a href="#">Intro to Course</a>
1	2	Intro to Web Apps	<a href="#">Intro to Web Apps</a>
1	5	Team Formation	Lessons from the Industry: <a href="#">Dara Oke - Finding your Place in the Tech Industry</a> <a href="#">Tre'Von McKay - Tech and Entrepreneurship</a> <a href="#">Kelly Graham- Interview with a UX Designer</a> <a href="#">Kelly Graham- Design Tips</a> <a href="#">Anthony Papini- Being Confident in Group Settings</a>
1	7	Understanding Your Customer	<a href="#">Human-Centered Design</a>
1	10	Intro to Design	<a href="#">Intro to Design</a>
2	1	How Does the Internet Work?	<a href="#">What is a Web Page?</a>
2	2	Intro to Web Development	<a href="#">What is a Web Developer?</a>
2	3	Intro to HTML	<a href="#">Intro to HTML</a>
2	5	More HTML/CSS	<a href="#">CSS Box Model</a> <a href="#">CSS Alignment and Float</a> <a href="#">CSS Cascading</a>
2	6	Intro to CSS	<a href="#">Intro to CSS</a>
2	7	Intro to Version Control and Git	<a href="#">Intro to Version Control</a>
3	1	Intro to JavaScript	<a href="#">What is JavaScript?</a>
3	2	Variables in JavaScript	<a href="#">Variables</a>
3	4	Functions in JavaScript	<a href="#">Functions</a>
3	5	Conditionals in JavaScript	<a href="#">Tests</a> <a href="#">Conditionals</a> <a href="#">Multiple Conditionals</a> <a href="#">Loops</a>
4	1	Intro to the Back End	<a href="#">Intro to the Back End</a> <a href="#">Intro to Node.js</a>

## Introduction to Python

NOTE: The stand-alone videos listed below are included in the Introduction to Python Course OneNote. They are intended for use in conjunction with the instructor-led course materials. These videos are not intended for self-paced training alone. The Introduction to Python Course OneNote is available for MSIA members to download from the Curriculum Download Center on the MSIA Member Site.

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[Certification Exam: MTA 98-381: Introduction to Programming Using Python](#)

## Unit 1

### Module 1: Python and Jupyter Basics

Section #	Title	Instructor Guide Video
1.1	Starting Jupyter Notebooks	<a href="#">Getting Started: Python in Jupyter Notebooks</a>
1.2	Types & Variables	<a href="#">Data Types and Variables</a>
1.3	Type Function	<a href="#">String and Numeric Addition</a>
1.4	Addition and Errors	<a href="#">Errors</a>
1.5	ASCII Art	<a href="#">ASCII Art</a>
1.6	Input	<a href="#">User Input</a>
1.7	Print Formatting	<a href="#">Formatting Strings</a>
1.8	Quote Display and Boolean	<a href="#">Displaying Quotes &amp; Boolean String Methods</a>
1.9	String Formatting and the 'in' keyword	<a href="#">String Methods</a>

### Module 2: Function

Section #	Title	Instructor Guide Video
2.1	Simple Functions	<a href="#">Creating Functions</a>
2.2	Function Return and Multi-parameters	<a href="#">Function Return &amp; Multiple Parameters</a>
2.3	Sequence	<a href="#">Sequence in Code</a>

### Module 3: Conditionals

Section #	Title	Instructor Guide Video
3.1	Conditionals: Boolean Strings	<a href="#">Conditionals for code control</a>
3.2	Conditionals: Comparison Operators	<a href="#">Conditional Operators</a>
3.3	String Comparison	<a href="#">String Comparisons</a>
3.4	Conditions elif and casting	<a href="#">Conditional elif</a>
3.5	Math Operators	<a href="#">Math Operators</a>

### Module 4: Nesting Loops

Section #	Title	Instructor Guide Video
4.1	Nested Conditionals	<a href="#">Nested Conditionals</a>
4.2	Escape Sequences	<a href="#">Escape Sequences</a>
4.3	'while' loop and incrementing	<a href="#">While Loops and Increments</a>
4.4	'while' Boolean loops	<a href="#">While Loops using Boolean Comparison Operators</a>

## Unit 2

### Module 1: Sequence Index

Section #	Title	Instructor Guide Video
1.1	String Sequences	<a href="#">Sequence: String - Accessing String Characters with Index</a>

Section #	Title	Instructor Guide Video
1.2	Index Slicing	<a href="#">Sequence: String - Accessing Substrings with Index Slicing</a>
1.3	Iterating Strings	<a href="#">Sequence: String - Iterating through Characters of a String</a>
1.4	String Methods	<a href="#">Sequence: String - More String Methods</a>

## Module 2: Sequence Manipulation

Section #	Title	Instructor Guide Video
2.1	List Sequences	<a href="#">Sequence: Lists - Creating Lists</a>
2.2	List Append	<a href="#">Sequence: Lists - Adding Items to the End of a List</a>
2.3	List Insert	<a href="#">Sequence: Lists - Modifying and Inserting Items into a List</a>
2.4	List Delete	<a href="#">Sequence: Lists - Deleting Items from a List</a>

## Module 3: Sequence Iteration

Section #	Title	Instructor Guide Video
3.1	Power of List Iteration	<a href="#">Iterate through Lists - Using for with in</a>
3.2	Range Iteration	<a href="#">Iterate through Lists - for range(start,stop,step)</a>
3.3	.extend(), .reverse(), and .sort() Methods	<a href="#">Combine Lists - .extend(), +, .reverse(), .sort()</a>
3.4	Between Strings and Lists	<a href="#">Converting Strings and Lists - .split(), .join()</a>

## Module 4: Working with Files

Section #	Title	Instructor Guide Video
4.1	Files Import, Open, and Read	<a href="#">Files - import, open(), read()</a>
4.2	File .readlines() and .close() Methods	<a href="#">Files - .readlines(), .close()</a>
4.3	File .readline() and .strip() Methods	<a href="#">Files - .readline() and .strip() String Formatting</a>
4.4	File .write() and .seek() Methods	<a href="#">Files - .write(), .seek(), File Modes</a>

## Unit 3

### Module 1: Python Modules

Section #	Title	Instructor Guide Video
1.1	Using Python Modules	<a href="#">Import and Use Math</a>
1.2	Working with Dates and Times	<a href="#">Working with Date and Time</a>
1.3	Date and Time Arithmetic	<a href="#">Date and Time Arithmetic</a>
1.4	File System	<a href="#">File System</a>

## Module 2: More Powerful Statements

Section #	Title	Instructor Guide Video
2.1	Boolean Expressions and Compound Conditionals	<a href="#">Compound Conditionals</a>
2.2	Advanced Loop Structures	<a href="#">Advanced Loop Structures</a>
2.3	Containment, Identity, and Operator Precedence	<a href="#">Containment, Identity, Precedence</a>
2.4	Powerful Output Formatting	<a href="#">Powerful Output</a>

## Module 3: Methods and Structures for Robust Code

Section #	Title	Instructor Guide Video
3.1	Error Handling	<a href="#">Error Handling</a>
3.2	Files	<a href="#">Files</a>
3.3	Tuples	<a href="#">Tuples</a>
3.4	Dictionaries	<a href="#">Dictionaries</a>

## Module 4: Proper Functions

Section #	Title	Instructor Guide Video
4.1	Script Environment & Command-Line Argument	<a href="#">Command-Line Scripts</a>
4.2	Variable Scope	<a href="#">Variable Scope</a>
4.3	Documenting Functions (docstrings)	<a href="#">Docstring: Function Documents</a>
4.4	Documenting Functions (pydoc)	<a href="#">Generate Pydoc Documents</a>

### 1. Preparing for Exam MTA 98-375 HTML5 App Development Fundamentals

**Course Description:** Prepare for the MTA 98-375 HTML5 Fundamentals exam, with a discussion of exam expectations and FAQs. Explore introductory concepts for Hyper-Text Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript, and get insight from the experts on how to be successful on the exam.

[Certification Exam: MTA 98-375: HTML5 Application Development Fundamentals](#)

Video Module Number	Video Module Name	Video Module Link
1	Identify Exam Expectations	<a href="#">Identify Exam Expectations</a>
2	Build the User Interface	<a href="#">Build the User Interface</a>
3	Format the User Interface	<a href="#">Format the User Interface</a>
4	Code by Using JavaScript	<a href="#">Code by Using JavaScript</a>
5	Manage Life Cycle	<a href="#">Manage Life Cycle</a>
6	Summarize and Prepare for the Exam	<a href="#">Summarize and Prepare for the Exam</a>

## 2. Preparing for Exam MTA 98-375 HTML5 App Development Fundamentals: Academic Edition

**Course Description:** This is an independent study course for professional development, which provides a fast-paced and comprehensive introduction to help you learn HTML5. Educators and students can also apply the HTML5 programming fundamentals in this course to other programming languages. Taught by educators with attention to the needs of school teachers and students, you will explore the application lifecycle, building the user interface, and CSS essentials, including managing text flow and managing the graphical interface by using CSS, JavaScript, and coding essentials. Learn about creating animations, graphics, accessing data, and JavaScript coding for the touch interface. The course includes 10 modules, ranging in length from 15 to 30 minutes. Each module introduces a new concept and reinforces the earlier topics.

[Certification Exam: MTA 98-375: HTML5 Application Development Fundamentals](#)

Video Module Number	Video Module Name	Video Module Link
1	The Application Lifecycle	<a href="#">The Application Lifecycle</a>
2	Building the User Interface, Part 1	<a href="#">Building the User Interface, Part 1</a>
3	Building the User Interface, Part 2	<a href="#">Building the User Interface, Part 2</a>
4	CSS Essentials, Part 1	<a href="#">CSS Essentials, Part 1</a>
5	CSS Essentials, Part 2	<a href="#">CSS Essentials, Part 2</a>
6	Managing Text Flow by Using CSS	<a href="#">Managing Text Flow by Using CSS</a>
7	Managing the Graphical Interface by Using CSS	<a href="#">Managing the Graphical Interface by Using CSS</a>
8	Understanding JavaScript and Coding Essentials	<a href="#">Understanding JavaScript and Coding Essentials</a>
9	Creating Animations, Working with Graphics, and Accessing Data	<a href="#">Creating Animations, Working with Graphics, and Accessing Data</a>
10	JavaScript Coding for the Touch Interface	<a href="#">JavaScript Coding for the Touch Interface</a>

## Software Development Fundamentals

**Course Description:** This course provides an overview of the concepts that viewers are expected to understand when taking Microsoft Certification Exam 98-361: Software Development Fundamentals. The content is introductory level and helps viewers understand the various aspects of software development. The course focuses on key fundamental concepts that all software developers need to know.

[Certification Exam: MTA 98-361: Software Development Fundamentals](#)

Video Module Number	Video Module Name	Video Module Link
1	General Software Development	<a href="#">General Software Development</a>
2	Core Programming	<a href="#">Core Programming</a>
3	Object-Oriented Programming	<a href="#">Object-Oriented Programming</a>
4	Web Applications	<a href="#">Web Applications</a>
5	Desktop Applications	<a href="#">Desktop Applications</a>
6	Understand Databases	<a href="#">Understand Databases</a>
7	Is This for Me?	<a href="#">Is This for Me?</a>