**FRONTEND SYLLABUS**

**HTML Basics**

**Getting Started With HTML**

* What is HTML?
* Global Structure of an HTML Document
* Intro to HTML Review
* Headings and Paragraphs
* Creating Lists
* Creating Links

**Structuring Your Content**

* Semantic HTML: <header>, <footer> and <section>
* Sectioning Content with <article>, <nav> and <aside>
* Grouping Content with <main> and <div>
* Using Multiple <header> and <footer> Elements

**Images, Text and Links**

* Understanding File Paths
* Adding Images to the Page
* Captioning Images
* Creating Breaks in Content
* Add Meaning to Words with Text Level Elements

**Going Further with HTML**

* Linking to Sections of a Web Page
* Root-relative Paths
* Link to Email
* HTML Entities and Reserved Characters
* Adding Developer Notes with HTML Comments
* Working on a Website Project Locally

**HTML Forms**

**Form Basics**

* Overview of Forms
* The Form Element
* The Input Element
* The Textarea Element
* The Button Element
* The Label Element
* Fieldsets and Legends
* Select Menus
* Radio Buttons
* Checkboxes

**CSS Basics**

* Getting Started with CSS
* CSS Basics Overview
* Introduction to CSS
* CSS Resources
* Inline and Internal Styles
* External Style Sheets
* Importing Style Sheets with @import

**Basic Selectors**

* Intro to Selectors
* Type Selectors
* ID Selectors
* Class Selectors
* Reusing Classes
* Descendant Selectors
* Pseudo-Classes
* CSS Comments

**Common Data Types**

* Pixel Units
* Percentages
* Em Units
* Rem Units
* Color Values
* Text Styles
* Font Properties
* Line Height

**The Box Model**

* The CSS Box Model
* Padding
* Borders
* Margins
* Display Values

**Basic Layout**

* Width and Height Properties
* box-sizing and max-width
* Backgrounds: Color and Images
* Backgrounds: Size and Position
* Floats
* Clearing Floats
* Lists

**Enhancing the Design with CSS**

* Text Shadows
* Box Shadows
* Text Shadows and Box Shadows
* Border Radius
* Gradients
* Gradients: Color Stops
* Gradients
* Transparent Gradients and Multiple Backgrounds
* Web Fonts with @font-face
* Media Query Basics
* Adjusting the Layout with Media Queries

**Fundamental Concepts**

* The Cascade: Importance
* The Cascade: Specificity and Source Order
* Inheritance
* Learning Tips and Tools

**Debugging CSS with Chrome Developer Tools**

**CSS Layout Basics**

**Getting Started with CSS Layout**

* What to Expect
* CSS Reset with Normalize
* Creating a Layout Wrapper
* Centering Page Content and Creating a Full-width Header

**Controlling Layout with CSS Display Modes**

* Positioning Elements Side-By-Side with Inline Display
* Using Inline-Block to Set Width, Height, Top and Bottom Margin and Padding
* Removing Gaps Between Inline and Inline-Block Elements
* The Column Layout Challenge
* The Column Layout Challenge Solution

**Page Layout with the Float Property**

* How Floats Work
* Wrapping Text Around Images with Floats
* Creating a Horizontal Navigation with Floats
* Clearing and Containing Floats
* The Float Challenge
* The Float Challenge Solution

**CSS Layout Project**

* Introducing the Project
* Creating and Styling the Layout Containers
* Adding Media Queries for Large Screens
* Column Layout with Media Queries

**Positioning Page Content**

* How Absolute Positioning Works
* Positioning Elements Relative to Other Elements
* Create an Image Caption with Absolute Positioning
* Fixed Positioning
* How Z-index Works

**Responsive Layouts**

**Responsive Theory**

* What is Responsive Web Design?
* Thinking in Relative Units

**Media Queries**

* Media Query
* Understanding Breakpoints
* Creating Breakpoints

**CSS Flexbox Layout**

**Understanding Flexbox**

* Introducing Flexbox
* Flexbox Basics and Terminology
* Creating a Flex Container

**Flexbox Properties**

* Controlling the Direction of Flex Items
* Wrapping Flex Items
* Distributing Space Inside a Flex Container
* Changing the Order of Flex Items
* Wrapping Items and Distributing Space
* Growing Flex Items
* Smarter Layouts with flex-basis and flex
* Aligning Flex Items on the Cross Axis
* Growing and Aligning Flex Items
* Vertical and Horizontal Centering

**Building a Layout with Flexbox**

* Building a Navigation Bar with Flexbox
* Creating a Two Column Layout with Flexbox
* Creating a Three Column Layout with Flexbox
* Aligning Items to the Bottom of a Column
* Creating a Sticky Footer with Flexbox

**JavaScript Basics**

**Storing and Tracking Information with Variables**

* Introducing Variables
* Naming Variables
* Review Creating and Naming Variables
* Strings and Numbers
* Spaces, tabs and new lines in JavaScript
* Capturing Visitor Input
* Combining Strings
* Working with Strings and Finding Help

**Working with Numbers**

* Numbers
* Review Numbers
* Doing Math
* Numbers and Strings
* The Mad Libs Challenge Revisited
* The Math Object
* Using Math Methods
* Create a random number
* The Random Challenge
* The Random Challenge Solution

**Making Decisions with Conditional Statements**

* Introducing Conditional Statements
* Comparison Operators
* Build a Random Number Guessing Game
* Boolean Values
* Programming Multiple Outcomes
* Improving the Random Number Guessing Game
* Document Your Code With Comments
* Combining Multiple Tests Into a Single Condition
* The Conditional Challenge
* The Conditional Challenge Solution

**Creating Reusable Code with Functions**

* Introducing Functions
* Functions Change the Flow of a Program
* Getting Information From a Function
* Giving Information to Functions
* Variable Scope

**JavaScript Loops, Arrays and Objects**

* Simplify Repetitive Tasks with Loops
* Introducing Loops, Arrays and Objects
* What are Loops?
* A Closer Look at Loop Conditions
* `do ... while` Loops
* For Loops
* Exiting Loops
* The Refactor Challenge
* The Refactor Challenge Solution
* The Refactor Challenge, Part 2

**Tracking Multiple Items with Arrays**

* What is an Array?
* Accessing Items in an Array
* Adding Data to Arrays
* Removing Items From Arrays
* Using For Loops with Arrays
* Useful Array Methods
* Two-Dimensional Arrays
* Build a Quiz Challenge, Part 1
* Build a Quiz Challenge, Part 1 Solution
* Build a Quiz Challenge, Part 2
* Build a Quiz Challenge, Part 2 Solution

**Tracking Data Using Objects**

* The Object Literal
* Accessing Object Properties
* Using `for in` to Loop Through an Object's Properties
* Mixing and Matching Arrays and Objects
* Create an Array of Objects
* JavaScript Object Notation
* The Build an Object Challenge, Part 1
* The Build an Object Challenge, Part 1 Solution
* The Build an Object Challenge, Part 2
* The Build an Object Challenge, Part 2 Solution
* The Student Record Search Challenge
* The Student Record Search Challenge Solution

**Javascript and the DOM**

**The Browser Environment**

* Welcome and Overview
* Thinking Globally
* What is the DOM?

**Getting a Handle on the DOM**

* A Simple Example
* Select a Page Element By Its ID
* Select All Elements of a Particular Type
* Selecting Elements with the Same Class Name
* Using CSS Queries to Select Page Elements

**Making Changes to the DOM**

* Getting and Setting Text with textContent and innerHTML
* Changing Element Attributes
* Styling Elements
* Creating New DOM Elements
* Appending Nodes
* Removing Nodes

**Responding to User Interaction**

* What is an Event?
* Functions as Parameters
* Delaying Execution with setTimeout()
* Listening for Events with addEventListener()
* Event Bubbling and Delegation
* The Event Object

**Traversing the DOM**

* Using parentNode to Traverse Up the DOM
* Using previousElementSibling and insertBefore
* Challenge: Using nextElementSibling
* Solution: Using nextElementSibling
* Getting All Children of a Node with children
* Getting the First and Last Child

**jQuery Basics**

**Introducing jQuery**

* What is jQuery?
* jQuery: History and Relevance Today
* jQuery vs. JavaScript
* Animating Elements with jQuery
* Blog Previewer: Changing Content Inside Elements
* Blog Previewer: Getting Values from Form Fields

**Understanding jQuery Events and DOM Traversal**

* Adding jQuery to a Project
* Spoiler Revealer: Breaking it Down
* Understanding Unobtrusive JavaScript
* Adding New Elements to the DOM
* Using on() for Event Handling
* The Event Object
* What is Traversal?

**Working with jQuery Collections**

* jQuery-Specific Selectors
* Changing Element Properties
* Changing Element Styles and Classes
* Stopping the Browser's Default Behavior
* Looping through a jQuery collection

**Bootstrap 4 Basics**

**Getting to Know Bootstrap 4**

* Rapid Development with Bootstrap
* Introducing Bootstrap 4
* Getting Started
* Creating a Simple Page
* Enhancing the Page

**Responsive Layouts with the Bootstrap Grid**

* Introducing the Project
* Layout in Bootstrap
* How the Bootstrap Grid Works
* Styling Content
* Column Sizing
* Reordering and Offsetting Columns

**Using Bootstrap Components**

* Building a Navbar
* Using Jumbotron to Showcase Key Content
* Buttons and Button Groups
* Inline Navs and Dropdown Buttons
* Displaying Content with Cards
* Building the Schedule with a List Group
* Displaying a Modal Window
* Using ScrollSpy to Highlight Nav Links

**Building Forms with Bootstrap**

* Form Groups and Form Controls
* Adding a Select Menu
* Custom Form Controls for Cross-Browser Consistency
* Structured Form Layouts with the Grid
* Add Custom CSS to Your Bootstrap Site

**BACKEND SYLLABUS**

**PHP Basics**

**Getting to Know PHP**

* Getting Started with PHP
* Intro to Workspaces and PHP Code
* PHP Comments

**Unit Converter**

* Variables in PHP
* Integers
* Floats
* Arithmetic Operators
* Creating a Unit Conversion Tool

**Daily Exercise Program**

* Strings
* Escape Sequence
* Combining Strings
* Booleans
* Comparing Values
* Adding Logic to Your Programs
* Daily Exercise Program

**PHP on the Web**

* HTML and PHP
* Don't Repeat Yourself
* Let PHP Do the Work
* Combining Multiple Files with Includes

**PHP Arrays and Control Structures**

**PHP Conditionals**

* Introduction
* Comparison Operators
* Negation Operator
* Nested Conditional Statements
* Logical Operators
* Operators

**PHP Arrays**

* Indexed Arrays
* Adding Array Elements
* Removing Array Elements
* Editing Array Elements
* Associative Arrays
* Mixing Data Types in Arrays
* Multidimensional Arrays
* Sorting Arrays

**PHP Loops**

* Do While Looping
* While Listing Array Values
* Ping Pong
* For Loops
* Foreach Loops
* Todo App
* Sorting Multidimensional Arrays

**PHP Functions**

**Introducing Functions**

* PHP Function Arguments
* PHP Function Default Arguments
* PHP Functions Basics

**Function Returns and More**

* Returning Values
* PHP Variable Functions
* PHP Closures

**PHP Internal Functions**

* PHP Built-Ins and Documentation
* PHP String Functions
* PHP Array Functions
* PHP Functions Next Steps

**Basic Error Handling in PHP**

* Dealing with Errors
* Turning On and Off Errors
* The php.ini File
* The .htaccess File
* Your Own PHP File
* Error Handling
* Logging

**Build a Basic PHP Website**

**Building a Media Library in PHP**

* Setting Up the Project
* Using PHP Code on Our Site
* Including the Header
* Including the Footer and Adding Additional Pages
* Using Variables for the Title Tag
* Working with \_GET Variables
* Adding Active States to the Navigation

**Listing and Sorting Inventory Items**

* Creating the Catalog Array
* Adding Elements and Specifying a Key
* Associative Arrays
* Displaying All Items
* Creating the Display Function
* Random Fun with Arrays
* Displaying Categories
* Sorting Array Items
* Item Details and Redirection
* Displaying Item Details
* Breadcrumbs

**Adding a Basic Form**

* Setting Up the Initial Form
* Creating Input Fields
* Working with Post Variables
* Working with Concatenation and Whitespace
* Redirecting After a Form Submission
* Checking the Request Method
* Validating Form Data
* Using a Third-Party Library
* Using Object and Validating Email
* Utilizing Object Properties and Methods
* SMTP with Google

**Enhancing a Form**

* Requesting Specific Information
* Grouping Options for More Detail
* Specifying Required Fields
* Setting an Error Message Variable
* Displaying the Error Message
* Error Message Priority
* Re-Displaying the Submission
* Escaping Output

**SQL Basics**

**Data, Databases and SQL**

* Why This Course?
* Data is Everywhere
* Talking to Databases with SQL
* Organizing Data with Databases
* Types of Data

**Getting Data from a Database**

* Tools We'll be Using
* Your First SQL Statement
* Retrieving Specific Columns of Information
* Categorizing Your Output with 'AS'
* Review & Practice with SQL Playgrounds

**Finding the Data You Want**

* Searching Tables with 'WHERE'
* Filtering by Comparing Values
* Filtering on More than One Condition
* Filtering by Dates
* Searching Within a Set of Values
* Searching Within a Range of Values
* Finding Data that Matches a Pattern
* Filtering Out or Finding Missing Information
* Review & Practice with SQL Playgrounds

**Reporting with SQL**

**Ordering, Limiting and Paging Results**

* Overview
* Retrieving Results in a Particular Order
* Limiting the Number of Results
* Paging Through Results
* Practice Session

**Working with Text**

* What Are Functions?
* Adding Text Columns Together
* Single vs Double Quotes
* Concatenating Text
* Changing the Case of Text Columns
* Creating Excerpts From Text
* Replacing Portions of Text
* Practice Session

**Aggregate and Numeric Functions**

* Counting Results
* Counting Groups of Rows
* Getting the Grand Total
* Calculating Averages
* Getting Minimum and Maximum Values
* Performing Math on Numeric Types
* Practice Session

**Date and Time Functions**

* Differences Between Databases
* Creating Up-to-the-Minute Reports
* Calculating Dates
* Formatting Dates For Reporting
* Practice Session

**Integrating PHP with Databases**

**Databases and PHP**

* Getting to Know the Project
* Introducing Objects
* Getting Started with PDO
* Handling Exceptions
* More Exceptions

**Querying the Database with PHP**

* Querying the Database
* Retrieving the Result Set
* Integrating Database Results
* Improve with Refactoring

**Using Relational Tables**

* Understanding Relationship Tables
* Querying Multiple Tables with JOIN
* JOINing Tables
* Understanding SQL Injections
* SQL Injection
* Preparing SQL Statements
* Adding a Secondary Query
* Fetching in a While Loop

**Limiting Records in SQL**

* Getting Specific with Queries
* Filtering Data by Category
* Setting Up Pagination Variables
* Calculations and Links
* Variable and Calculations
* LIMIT and OFFSET
* Adding Pagination Links
* Pagination Function
* Simplifying with a Function

**Filtering Input for Queries**

* Setting Up the Search Form
* Matching Search Patterns
* Finding Data that Matches a Pattern
* Creating the Search Function
* Accounting for Empty Results
* Multiple Conditionals
* Combining Search and Pagination

**Browser Persistent Data with PHP**

* Types of Persistence
* Using Forms for Persistence
* Reading, Writing and Destroying Sessions
* Writing Cookies
* Reading and Deleting Cookies
* Cookies

**CRUD Operations with PHP**

**Project Setup**

* What is CRUD?
* Introduction to the Project
* Connecting to the Database
* Handling Exceptions

**Creating Records**

* Reading Project Data
* Accepting User Data
* Adding Projects
* Reading Task Data
* Adding Tasks
* Remembering Form Data
* Validating Dates

**Reading and Writing Reports**

* Totaling Time
* Summarizing Project Time
* Filtering by Project
* Filtering by Category
* Filtering by Time Period
* Naming Reports

**Updating and Deleting Records**

* Updating Projects
* Updating Tasks
* Deleting Tasks
* Preserving Data Integrity

**File Handling with PHP**

**Basic File Handling**

* Directory and File Structures
* Including and Opening files
* Reading Files Into a String or Array
* Writing Files Line by Line
* Writing Files All at Once

**Parsing Specific Formats**

* Personal Recommendations Project
* Writing CSV
* Reading JSON
* Writing JSON
* Reading XML
* Writing XML

**Object-Oriented PHP Basics**

**Why Object-Oriented Programming?**

* Introducing the Cookbook Project
* What is Object-Oriented Programming?
* Why Use Object-Oriented Programming?

**Understanding Classes**

* Classes and Objects
* Adding Properties
* Accessing Properties
* Adding Methods
* Accessing Methods

**Building the Recipe**

* Access Modifiers
* Associative Arrays
* Cleaning Up the Class
* Adding Getters and Setters
* Static Methods
* Recipe Details
* Separating Methods
* Magic Methods
* Magic Constants
* Populating the Recipes

**Building a Collection**

* Creating a Collection
* Enhancing the Collection
* Filtering
* Shopping List Method
* Creating a Meal Plan

**Extending Object-Oriented PHP**

**Inheritance**

* Building Relationships
* Extending a Class
* Using Multiple Classes
* Adding Child Features
* Override and Protect Scope
* Extending a Method
* Method Scope
* Extending the Display

**Extending the Family**

* Siblings and Grandchildren
* A Second Child
* Extending a Child
* Grandchild Relationships
* Extending the Project

**Designing Interfaces in PHP**

**Introducing Interfaces**

* What is an Interface
* Autoloading
* Writing an Interface
* Implementing an Interface

**Using Interfaces**

* Code to Multiple Interfaces
* Implementing Interface Methods
* Extending an Interface
* Working with a Single Item
* Extending a Collection
* Testing for Interfaces

**Abstract Classes**

* Abstract Class vs Interface
* Abstract Methods and Classes
* Passing Abstract Methods
* Extending an Abstract Class
* Finishing Our Site
* Reviewing Use Cases

**Introduction to PHP 7**

* Type Declarations
* Error Handling
* New Operators
* Easy User-land CSPRNG
* Other Changes and Gotchas

**Basic Exception Handling with PHP**

* What are Exceptions?
* Throwing Exceptions
* Exceptions versus Errors
* Handling Uncaught Exceptions

**Dependency Manager with Composer**

* Introducing Dependency Management and Composer
* Installing Composer
* Finding and Using Packages
* Maintaining Package Versions
* Maintaining Consistent Environments