

PROGRAM OUTLINE

28 WEEKS

Faculty Information
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PROGRAM DESCRIPTION

The Full Stack Software Development program will prepare students to become industry ready software developers upon graduation. It will cover technologies such as HTML5, CSS3, and JavaScript. These are the technologies that will allow them to build a front-end website. Students will bring data to life by creating visual dashboards of large amounts of data and demonstrate their front end design ability and work with databases. Students will also learn to use Python, Django, JSON, MySQL and MongoDB. These are the technologies used in back-end development. Students will be able to use these to create projects consisting of a data management website. Students will utilize technology in both front & back- end to develop and deploy a full-stack web-based application framework.

PROGRAM LEARNING OUTCOMES

- ❖ Successfully work as an individual and as part of a team to develop and deliver quality web applications;
- ❖ Reconcile conflicting project objectives, finding acceptable solutions given existing resources (cost, time, systems)
- ❖ Design appropriate solutions in one or more application domains using agile development approaches that integrate ethical, social, legal, and economic concerns;
- ❖ Utilize and apply current technical concepts and practices in the core information technologies, design effective and usable IT-based solutions and integrate them into the user environment;
- ❖ Assist in the creation of an effective project plan;
- ❖ Identify and evaluate current and emerging technologies and assess their applicability to address the user's needs;
- ❖ Collaborate in teams to accomplish a common goal by integrating personal initiative and group cooperation;
- ❖ Communicate effectively and efficiently with clients, users and peers both verbally and in writing, using appropriate terminology;

MODULES & RESOURCES

Module	Length (Weeks)	Resources
HTML & CSS Fundamentals	1	Learning Management System (Online)
JavaScript Fundamentals	1	Learning Management System (Online)
Interactive Front End Development	6	Learning Management System (Online)
User Centric Front End Development	4	Learning Management System (Online)
Python Fundamentals	1	Learning Management System (Online)
Practical Python	4	Learning Management System (Online)
Data Centric Development	4	Learning Management System (Online)
Full Stack Frameworks	6	Learning Management System (Online)
Career Strategies	1	N/A



MODULE LEARNING OUTCOMES

Module	Overview
HTML & CSS Fundamentals	<p>HyperText Markup Language (HTML) is a powerful computer language devised to implement website creation. HTML is all about content; it defines the structure of the web pages that we view in our browser every time we go to Facebook, Twitter, Amazon, or any other site. HTML5 is the latest version of the language, which incorporates added video functionality and other features. It takes design and structural cues from print media, allowing us to create headings, paragraphs, and insert images. Most importantly, HTML allows us to link externally to other web pages.</p> <p>Cascading Style Sheets (CSS) allows developers to create styles, and provides the visual impact for websites without having to write complex HTML. CSS doesn't have to be written into a .html file, and can be linked to from anywhere on the web, allowing for the sharing of style sheets, a practice that is commonly used by developers. CSS allows you to enhance the User Experience (UX) for web pages. You'll learn how to style and modify the elements that you've created in HTML pages, and how to structure your elements in a balanced way. Gain a knowledge of how to work with different types of fonts, and much more!</p>
JavaScript Fundamentals	<p>JavaScript is a coding language that allows you to enhance your HTML with animation, interactivity, and dynamic visual effects. Javascript is currently the most popular coding language. It integrates the ability to provide immediate and insightful feedback to users. For example, a JavaScript-powered shopping cart can instantly display a total cost to a website visitor.</p> <p>In this module you'll learn the foundations of JavaScript. In addition to exploring the common concepts and structures that underpin most modern programming languages, you will emerge from the course with the skills and the knowledge required to go to the next level of fully interactive web development.</p>
Interactive Front End Development	<p>In this module you'll learn to work with elements of HTML, CSS and JavaScript and how to combine them to create interactive web applications. As well as working with data from external applications using Application Programming Interfaces (APIs), you will learn how to create data visualizations using custom JavaScript Libraries.</p>
User Centric Front End Development	<p>Frontend developers use HTML, CSS and JavaScript to code the website and web app designs created by web designers. The code they write runs inside the user's browser, as opposed to a backend developer who runs code on a web server.</p> <p>Frontend developers resolve any errors or bugs on the frontend. They ensure that all interactions on web browsers are seamless and user friendly, as well as managing the design across various platforms. In this module you'll learn the skills, tools and languages to create great web based user centered experiences.</p>
Python Fundamentals	<p>Python is a powerful general purpose language. It is considered more readable and intuitive than other languages that serve the same purpose. Python can be used to build web or app prototypes, web development, simple scripting and data analysis. It is a constantly evolving language thanks to its open source nature; Python has an extensive community of volunteers who are passionate about improving the language.</p> <p>It is a popular language among tech and web giants like Google, Instagram and Reddit. This module will provide you with an understanding of the foundations of Python. You will learn how to make calculations, write algorithms, and instruct a computer to make decisions and perform repetitive tasks. You will experience how all these elements come together when you're building projects and applications.</p>



Practical Python	Coding skills can help solve common, user-specific problems. Maybe you need to rename a few hundred files or send out notifications each time a particular website updates. Python is an ideal language for beginners because of its simple syntax. It's not a series of cryptic 1's and 0's; you'll be able to learn it without any programming experience.
Data Centric Development	A Data Centric Application is one in which the database plays a key role. How the data is structured will influence how you write the code. In this module, you'll work with structured and unstructured databases to learn how to manipulate your data. You'll learn how to present that data in a meaningful and easily digestible way.
Full Stack Frameworks	Students will learn how to plan and manage an end to end website project through all stages of the build. Students will extend their technical proficiency in contemporary software tools, including Django and Advanced Python and SQLite, they will understand how to evaluate and implement application features (blogs, forums, polling) as well as deploy authentication, security features and e commerce payment systems. Students will demonstrate their knowledge and skills through completion of the final project to develop and deploy a full stack web-based application framework built on and deployed to a Linux environment.
Career Strategies	This module will prepare students to confidently execute their job search as well as how to conduct it and how to market themselves. They will learn to utilize and navigate the hidden job market, with emphasis placed on the importance of finding the right job. Students will develop the skills necessary to communicate effectively, such strategic resume writing, effective interviewing skills, and interview preparation to ensure their success in the career search process. Through this process, they will develop the ability to recognize and build on transferrable skills (soft skills as well as technical skills) in order to effectively and efficiently market themselves.



SCHEDULE

Week	Modules
1	HTML & CSS Fundamentals
2	Java Script Fundamentals
3	Interactive Front End Development
4	Interactive Front End Development
5	Interactive Front End Development
6	Interactive Front End Development
7	Interactive Front End Development
8	Interactive Front End Development
9	User Centric Front End Development
10	User Centric Front End Development
11	User Centric Front End Development
12	User Centric Front End Development
13	Python Fundamentals
14	Practical Python
15	Practical Python
16	Practical Python
17	Practical Python
18	Data Centric Development
19	Data Centric Development
20	Data Centric Development
21	Data Centric Development
22	Full Stack Frameworks
23	Full Stack Frameworks
24	Full Stack Frameworks
25	Full Stack Frameworks
26	Full Stack Frameworks
27	Full Stack Frameworks
28	Career Strategies

Please note that schedule may not occur in this particular order.