**Training Proposal for University of Petra**

**UOP Training**

**Training specifications and requirements**

***22/01/2020***

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# Purpose of Document

The purpose of this document is to provide a technical guideline to implement and setup Full Stack Web Development course based on Python and Django framework training for UOP staff. The document contains list of software specifications, hardware specifications, course outlines, and learning outcomes for this training.

# Introduction

This course will cover everything learner needs to develop and design a website using latest Front-End and Back-End technologies such as - HTML5, JavaScript, jQuery, CSS, bootstrap, Python, and Django framework.

Django is a powerful tool that helps different companies, especially Universities, to be more productive and self-independent in software development projects by providing a robust framework with rapid development tools. So, the Faculty of Information Technology plans to implement this training course in a period between February 2020 and March 2020. However, the Faculty of Information Technology will provide a training component focus on Web development and specifically the Django framework.

# TrainingCourse

The following table describes the Full-Stack Web Development training course and its period.

|  |  |  |
| --- | --- | --- |
| **Course name** |  **Total hours** | **Description** |
| **Full Stack Web Development based on Python and Django framework** | 100 |  This course will cover everything learner needs to develop and design a website using latest front-end and back-end technologies such as: - HTML5, JavaScript, jQuery, CSS, bootstrap, AngularJS, Python, and Django framework. |

# *Table 1 List of Tracks*

# Assumptions

The following is a list of assumptions and limitations for training for learners, instructors, scheduling, materials, and technical readiness.

**Learners for this course**

* Students will be proficient in basic programming skills before they attend training.
* The maximum number of leaners per class is 10.
* Course with 100 Hour 20 days 5 hours everyday

**Schedule**

* Any changes in the implementation timeframe will impact the training finishing date

**Materials**

* Course materials will be delivered to registered users two days prior to the start date of the track

**Technical Readiness**

This section presents the Hardware, software, network requirements to implement FIT training course*.*

1. **Software Specifications**

|  |  |
| --- | --- |
| Track name | Operating Systems and IDEs |
| Full-Stack web development and design | Ubuntu 18 LTS or later or IOS operating system, Atom, python 3.7 and MySQL. PyCharm IDE prefer  |

# *Table 3 Software specifications*

*Note: you can install dual operating systems into same machine.*

1. **Hardware specifications for learner computer in each track.**

|  |  |
| --- | --- |
| Track name | Hardware |
| Full-Stack web development and design | Core i3 with 4 GB RAM minimum requirements |

# Course outlines and outcomes

# Full-Stack web development and design

This track is designed to present the learner with the required skills and practice related to Web programming. Subjects such as HTML5, Java Scripts, jQuery, AngularJS, CSS, bootstrap, Server-side technology: Python and most popular open source framework Django, will be the core of study in this track

**Course outcomes**

**Upon successful completion of this track, learners are expected to achieve the following learning outcomes:**

* Create a fully functional web Application for University Of Petra using the Full-Stack with Django 3.0
* Learn how to use HTML to create website content
* Use CSS to create beautifully styled sites
* Learn how to take advantage of Bootstrap to quickly style sites
* Use JavaScript to interact with sites on the Front-End
* Learn how to use jQuery to quickly work with the DOM
* Understand HTTP requests
* Create fantastic landing pages
* Learn the power of Python to code out your web applications
* Use Django as a back end for the websites
* Implement a full Models-Views-Templates structure for your site
* Use web development tools to implement practical cases to develop a web site using HTML5, JavaScript, python, and Open source ORM framework such as Django.
* Configure the basic Internet services, design, and publish web site to provide dynamic pages.

**Audience:**

* Programmers in UOP Computer Center
* Academic staff in Information Technology Faculty
* Professionals looking to bridge gaps in their knowledge
* Python Developers looking to get into Web Development

**Course outlines**

|  |  |  |
| --- | --- | --- |
| **No of hours** | **Topic** |  **Topic Details**  |
| **2** | **Introduction** | Introduction to the Internet, protocols and services and development environment |
| **12** | **HTML 5** | Elements , Attributes , Headings , Paragraphs , Formatting , Fonts , Styles , Links , Images , Tables , Lists , Forms, Iframe , Layout , Doctypes , Head , Meta , Scripts , Media , Audio , Object , Video , YouTube , Media Tags , Summary, local storage, web socket  |
| **12** | **JavaScript** | Variable, Value, Data type, Operators and Expressions, Arrays, Decision making and Loops, Functions, Variable Scope and Objects, The Browser Environment, Events and Event Handling |
| **12** | **jQuery and CSS** | jQuery Intro, Query Install, jQuery Syntax, jQuery Selectors, jQuery Events CSS, Introduction CSS, Syntax CSS, Selectors, Backgrounds CSS, Text CSS, Fonts CSS, Links CSS, Lists CSS, Tables CSS, Box Model CSS Border CSS, Outline CSS, Margin CSS, Padding CSS, Dimension CSS, Display CSS, Positioning CSS, Floating CSS, Align CSS, Combinatory CSS, Pseudo-class CSS, Pseudo-element CSS, Navigation Bar CSS, Image Gallery CSS, Image Opacity CSS, Image Sprites CSS, Media Types CS, introduction to less . |
| **6** | **Bootstrap 4** | Introduction to Bootstrap and responsive design , Bootstrap Grid, Bootstrap Text / Typography, Bootstrap Table, Bootstrap Jumbotron And Page Header, .Bootstrap Wells, Bootstrap Alerts, .Bootstrap Buttons, Bootstrap Button Groups, .Bootstrap Glyphicons, Bootstrap Badges and Labels, Bootstraps Progress Bars, Bootstrap Pagination, .Bootstrap Pager, Bootstrap List Groups, Bootstrap Panels, Bootstrap Dropdowns, Basic Collapsible, Bootstrap Tabs and Pills, Bootstrap Navigation Bar, Bootstrap Forms, Bootstrap Input, Bootstrap Carousel Plugin, Bootstrap Model Plugin, Bootstrap Tooltip Plugin, Bootstrap Popover Plugin, Bootstrap Scrollspy Plugin, Bootstrap Affix Plugin |
| **26** | **Python Programming** | Introduction To python 3 and django web frameworkSetup IDE, python and django , Data TypesCollection Data TypesControl Structures and FunctionsModulesObject-Oriented ProgrammingFile HandlingAdvanced Programming TechniquesDebugging, Testing, and ProfilingProcesses and Threading |
| **30** | **Django Framework** | Software tools for a Django development environmentDatabase abstraction (Object Relational Mapper)Creation of a modelModel validationExport and import of data (via JSON)Working with an ORM on the commandlineUsing Django's adminDefining URLs at one place (Routing)In-depth explanation of function based viewsHow to use class-based viewsCreating templates using Django's template engineHow to handle static files in DjangoManaging Django's settingsDifferent debugging techniquesLoggingForms and their validationSending email using a formpaginationAuthenticationSessions and messagesSecurityWrite your own middlewareCreate your own tags and filter |