

Government of Pakistan
National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"



Course Contents / Lesson Plan
Course Title: CIT (Web Development)
Duration: 3 Months

Revised Edition

Trainer Name	
Author Name	Muhammad Asfand Naveed (CEO Proglabs)
Course Title	CIT (Web Development)
Objectives of Course	This comprehensive course offers participants the chance to forge a rewarding career in the dynamic realm of web application development. It's the ultimate web development program, encompassing everything you need to know from the basics to advanced tools and techniques. Starting from the ground up, you'll delve into HTML5, CSS, JS, jQuery, PHP, MySQL, AJAX, LARAVEL, and essential website design concepts. By mastering common tasks required for both development and administration, you'll be well-equipped to thrive in the ever-evolving world of web development.
Entry-level of trainees	Intermediate / Matric Science
Learning Outcomes of the course	<p>Knowledge Proficiency Details</p> <ul style="list-style-type: none"> ● Knowledge to build REAL world creative and modern website from very scratch using modern web technologies ● Knowledge of new ways of coding, tips & tricks and modern best practices to build a professional website. ● Knowledge of wire-framing, HTML5, CSS3, jQuery and Bootstrap (+BS 5) Framework ● Knowledge to build a fully responsive website which will look perfect on all the small & wide screens. ● Knowledge of PHP, OOP, AJAX, MySQL ● The basics of Laravel such as installation, routing, template, controller, model, migration, seeder etc. ● You will make your first crud app with Laravel ● You will make Restful API ● You will make Gallery app with Laravel and jQuery ● You will learn blade template in Laravel <p>Skills Proficiency Details</p> <ul style="list-style-type: none"> ● Students of web development ● Anyone who wants to learn how to build websites using PHP ● Anyone interested in a proper certification in PHP course in Lahore or any other city ● People already working as web developers who want to learn the latest techniques and tricks in PHP based web development ● Employees of web development companies and software houses who want to polish their skills further in Web Development especially with focus on PHP

	<ul style="list-style-type: none"> • Business owners who want to build and run their own websites themselves
Course Execution Plan	<p>The total duration of the course: 3 months (12 Weeks)</p> <p>Class hours: 4 hours per day</p> <p>Theory: 20%</p> <p>Practical: 80%</p> <p>Weekly hours: 20 hours per week</p>

	Total contact hours: 240 hours
Companies offering jobs in the respective trade	<ol style="list-style-type: none"> 1. Upwork 2. Freelancing 3. Fiverr 4. Government Institutes 5. Software Houses 6. Crossover 7. All Private Institutes who are managing software

Job Opportunities	<p>All over the world there is a high demand in the Information Technology industry for developers in various fields such as mobile application developer, web developer and graphic designer. Smartphones have brought about revolution; Animation technology has come a long way since the early days of hand-drawn cartoons. Nowadays you will find websites and apps on everything. This increase in usage of websites, apps and android smart devices has created new opportunities for all to earn big and make a career out of this field. With the help of this course, we will be able to give technical training in Information Technology to our youth. There are also opportunities for start-up entrepreneurship due to the high demand in the market in following designated jobs;</p> <ul style="list-style-type: none"> • Software Engineers • Mobile App Developers • DBAs • Web Developers • Network Administrator • IT Support Officer • Manager / Assistant Manager IT
No of Students	25
Learning Place	Classroom / Lab
Instructional Resources	<ul style="list-style-type: none"> • https://www.w3schools.com/ • https://www.tutorialspoint.com/ • https://www.php.net/ • https://laravel.com/ • Beginning Laravel • Build Websites with Laravel 10.x

Scheduled Weeks	Module Title	Days	Learning Units	Home Assignment
Week 1	Introduction & Front-End Development (Basics)	Day 1	Motivational Lecture Course Introduction Job market Course Applications	
		Day 2	Introduction to World Wide Web Website Web Pages Different types of websites	
		Day 3	Architecture of static and dynamic Webpages Compare Static websites with Dynamic websites	
		Day 4	Difference between Frontend & Backend Language Install Chrome Browser Chrome Web Developer Tools Install VS Code Editor What Is HTML? HTML building blocks Basic HTML Page Structure Headings & Paragraphs	
		Day 5	HTML Formatting HTML Attributes	

Week 2			Block Level Element vs Inline Element HTML Tag vs. Element	<ul style="list-style-type: none"> Task 1 To
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		Day 1	HTML Image & Link	<ul style="list-style-type: none"> Task 17
	HTML & CSS	Day 2	HTML Table HTML Lists	
		Day 3	HTML Forms	
		Day 4	HTML Layout Elements HTML Iframe HTML Media Elements	
		Day 5	What is CSS? CSS Syntax Selector Types	
Week 3	CSS & Bootstrap	Day 1	Inclusion CSS Rules Overriding CSS Comments CSS Colors CSS Backgrounds CSS Borders	<ul style="list-style-type: none"> Task 18 To Task 25
		Day 2	CSS Margins CSS Padding CSS Height/Width	
		Day 3	CSS Lists CSS Tables CSS Display CSS Float	
		Day 4	What Is Bootstrap? Bootstrap Grid System Bootstrap Colors	

			Bootstrap Buttons	
		Day 5	Bootstrap Navbar Bootstrap Modal Bootstrap Tables Bootstrap Forms	
Week 4		Day 1	What is JavaScript? JavaScript Output Statements JavaScript Variables	
		Day 2	JavaScript Operators Conditional Statements	
	JavaScript	Day 3	Loop Types <ul style="list-style-type: none"> for-loop while loop do While loop 	<ul style="list-style-type: none"> Task 26 To Task 29
		Day 4	JavaScript Functions	
		Day 5	JavaScript Objects & Arrays	
Week 5		Day 1	What Is jQuery? jQuery Setup jQuery Selectors	
		Day 2	jQuery Events jQuery Effects	
	jQuery & PHP	Day 3	Overview of PHP Variables Constants,	<ul style="list-style-type: none"> Task 30

			Output Statements	
		Day 4	Operators Decision Making	
		Day 5	Loop Types	
Week 6		Day 1	Functions	<ul style="list-style-type: none"> • Task 31 To • Task 34
		Day 2	Arrays	
		Day 3	PHP Forms	
	Midterm Exam	Day 4	Midterm Exam	
		Day 5	Mistern Exam	
Week 7	PHP & OOP	Day 1	Object Oriented Programming Class Object, Access Specifiers/Modifiers Member Variables	<ul style="list-style-type: none"> • Task 35 To • Task 37
		Day 2	Static Variables Member Functions Inheritance	
		Day 3	Parent class Child Class Constructors Destructors	

			Polymorphism	
		Day 4	Function Overloading Abstraction Encapsulation Session	
		Day 5	Cookies Databases Introduction Database Types	
Week 8	PHP & SQL	Day 1	What is a Query SQL Basic Commands MYSQL Joins. Creating a database using PHP MY ADMIN.	• Task 38
		Day 2	DDL, DML & DRL operations in SQL	
		Day 3	DB Integration with PHP	
		Day 4	CRUD Operations using	
		Day 5	MYSQL & php	
Week 9	Laravel	Day 1	Introduction to Laravel Laravel Project Setup	• Task 39
		Day 2	Laravel Architecture Concepts	

		Day 3	Routing	
	Laravel	Day 4	Blade Template	
		Day 5	Migrations	
Week 10	Laravel	Day 1	Migrations	• Task 40
		Day 2	Relationships	
		Day 3	Relationships	
		Day 4	Security	
		Day 5	Security	
Week 11	Project	Day 1	[Project 1] crud application	
		Day 2	[Project 1] crud application	
		Day 3	[Project 3] Gallery App	
		Day 4	Final Project (data crud + gallery combo)	
		Day 5	Final Project (data crud + gallery combo)	
Week 12	Project Evaluation & Final Term Exam	Day 1	Project Evaluation	
		Day 2	Project Evaluation	
		Day 3	Project Evaluation	
		Day 4	Project Evaluation	
		Day 5	Final Term Exam	

Annexure-I:Tasks for Advance Web Application Development

Task no.	Task	Description	Week
1	Using Heading, Paragraph, Line Break, and Horizontal Rule Tags	Write an HTML code that displays all 6 headings with each heading on new line having paragraphs and the end of each paragraph; place a line (Horizontal Rule).	Week 2
2	Use Comments and Include Tags in a single code.	Make a webpage Comment.html having text "I am Internal Text" with having commented text "I am Comment" that will not display in the webpage. Make another webpage with name IIncluded.html containing the text "I am External Text" and display its contents in Comment.html webpage.	
3	Use Image Tag with attributes.	Insert image in the webpage with height=30, width=30 having 3 border size and when we bring mouse on the image, it displays text "I am Image in Webpage".	
4	Use of Hyperlink	Use <A HREF> . . . Tag with all attributes to create a Local Link to any file. Make second link which is used to link High Level Directory. Make third link which is used to link any Internet website. Lastly make fourth link which contains an email address and when user clicks the link, email editor opens up.	
5	Background image	Make a webpage with image as a Background and when we scroll this webpage, the image stays fix and only the top of the webpage scrolls.	

7	Buttons with images	Make the Submit and Reset buttons in the form having pictures on it instead of simple text.	
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8	External Style Sheet	Call an External Style Sheet in the webpage in which Font Size of the text must be 77 points Color of the text must be green and background of the webpage must be yellow.	
9	Use of on Click Event	Change the color of the text when it is clicked.	
10	Use of on Mouse Over Event	When we bring the mouse on the image, the image changes its position.	
11	Navigation bar using CSS	Make two navigation bars with CSS using class and id attribute. One should be on the top of the page and the second should be displayed on left of the page in shape of a column.	
12	Forms	Make a login and signup form on different pages that should be displayed in the center of the page using CSS and html.	
13	Dropdowns	Make dropdowns with nested HTML tags and CSS.	
14	Bootstrap based columns	Make different sizes of columns using bootstrap classes.	
15	Forms using bootstrap	Make a form using Bootstrap classes for buttons and forms.	
16	Progress Bar	A progress bar for student's skills in coding languages using bootstrap.	
17	Bootstrap based pages	Make 3 pages of home page, admission form, and about us page using bootstrap classes with navigation bars, headers, footers and forms.	
18	Use Output Statement of JavaScript	Display your name on the screen using JavaScript.	Week -3

19	Use of If...else Condition	Use If...else statement of JavaScript to write a code to Display “Good Morning” or “Good Afternoon” according to current Time.	
20	Use of switch statement	Use the switch statement to display “today is (whatever day it is)” according to the current day.	
21	Use of for loop	Use of loop to display a string of all the names of months using JS functions and variables.	
22	Alert message	Make an alert message display on the screen if the user clicks a button.	
23	JavaScript calculator	Make a JavaScript calculator that should answer addition, multiplication and subtraction question using JavaScript variables.	
24	Hide and show in jQuery	Make a paragraph line and two buttons named “hide” and “show” using HTML and hide the paragraph if the button “hide” is clicked, and show the paragraph if the button “show” is clicked.	
25	Slide down button	Make a button that slides down some content when clicked using jQuery.	
26	Use of Switch Statement	Use the Switch statement of PHP to display the current day of the week.	Week-4
27	Loops to display numbers on screen	Write a Program to display count, from 5 to 15 (as shown below) using following: <ul style="list-style-type: none"> ● For Loop ● While Loop ● Do...while Loop 	
28	Use Output Statement of PHP	Display your name on the screen using PHP.	

29	Use of If...else Condition	Use the If...else statement of PHP to write a code to Display "Good Morning" or "Good Afternoon" according to current time.	
30	Using JQuery	Create a web page that includes a button and a paragraph element. When the button is clicked, use jQuery to change the text of the paragraph to a predefined message.	Week-5

31	Factorial of Number	Write a program to calculate factorial of a number using for loop in PHP.	Week-6
32	While Loop to display the pattern	Write a Program to create following pattern using while loop: * ** *** **** ***** ***** ***** ***** *****	
33	Do...while Loop to display the numbers	Write a Program to display count, from 1 to 5 using PHP do...while loop as given below: 1 2 3 4 5	
34	Using Array and for...each loop	You need to write a program in PHP using for...each loop to remove specific elements by value from an array using PHP program. Hint: <ul style="list-style-type: none">Take an array with list of month names.Take a variable with the name of value to be deleted	

Task No.	Task	Description	Week
35	Sort the Array Elements	Write a function to sort an array	Week-7
36	Find the case of string	Write a PHP function that checks whether a string is all lowercase.	

37	Find String Length	<p>Write a PHP program to find the length of the string.</p> <p>Hint:</p> <ul style="list-style-type: none"> ● You have to use one variable. ● You must use a built-in PHP String Function. 	
38	CRUD in PHP	Create a PHP web application with CRUD functionality for managing user information, including fields for id, first name, last name, email, and phone number, enabling users to create, read, update, and delete records stored in a MySQL database.	Week-8
39	Laravel Task 1	Integrate a master template into a Laravel web application to ensure consistent layout and design across multiple pages, utilizing HTML, CSS, and JavaScript, extending the master template in individual views, and populating dynamic content sections with data retrieved from the database or external sources.	Week-9
40	Laravel Task 2	Create a Laravel web application that demonstrates one-to-one, one-to-many, one-to-many inverse, and polymorphic (one-to-many) relationships, allowing CRUD operations and proper data management for each relationship type.	Week-10

Annexure-II

SUGGESTIVE FORMAT AND SEQUENCE ORDER OF MOTIVATIONAL LECTURE.

Mentor

Mentors are provided an observation checklist form to evaluate and share their observational feedback on how students within each team engage and collaborate in a learning environment. The checklist is provided at two different points: Once towards the end of the course. The checklists are an opportunity for mentors to share their unique perspective on group dynamics based on various team activities, gameplay sessions, pitch preparation, and other sessions, giving insights on the nature of communication and teamwork taking place and how both learning outcomes and the student experience can be improved in the future.

Session- 1 (Communication):

Please find below an overview of the activities taking place Session plan that will support your delivery and an overview of this session's activity.

Session- 1 OVERVIEW
Aims and Objectives:
<ul style="list-style-type: none">● To introduce the communication skills and how it will work● Get to know mentor and team - build rapport and develop a strong sense of a team● Provide an introduction to communication skills● Team to collaborate on an activity sheet developing their communication, teamwork, and problem-solving● Gain an understanding of participants' own communication skills rating at the start of the program

Activity:	Participant Time	Teacher Time	Mentor Time
Intro Attend and contribute to the scheduled.			
Understand good communication skills and how it works.			
Understand what good communication skills mean			
Understand what skills are important for good communication skills			
Key learning outcomes:	Resources:		Enterprise skills developed:

● Understand the	● Podium	● Communication
<p>communication skills and how it works.</p> <p>● Understand what communication skills mean</p> <p>● Understand what skills are important for communication skills</p>	<p>● Projector</p> <p>● Computer</p> <p>● Flip Chart</p> <p>● Marker</p>	<p>● Self Confidence</p> <p>● Teamwork</p>

Schedule	Mentor Should do
Welcome: 5 min	Short welcome and ask the Mentor to introduce him/herself. Provide a brief welcome to the qualification for the class. Note for Instructor: Throughout this session, please monitor the session to ensure nothing inappropriate is being happened.
Icebreaker: 10 min	Start your session by delivering an icebreaker, this will enable you and your team to start to build rapport and create a team presentation for the tasks ahead. The icebreaker below should work well at introductions and encouraging communication, but feel free to use others if you think they are more appropriate. It is important to encourage young people to get to know each other and build strong team links during the first hour; this will help to increase their motivation and communication throughout the sessions.
Introduction & Onboarding: 20mins	Provide a brief introduction of the qualification to the class and play the “Onboarding Video or Presentation”. In your introduction cover the following: <ol style="list-style-type: none"> 1. Explanation of the program and structure. (Kamyab jawan Program) 2. How you will use your communication skills in your professional life. 3. Key contacts and key information – e.g. role of teacher, mentor, and SEED. Policies and procedures (user agreements and “contact us” section). Everyone to go to the Group Rules tab at the top of their screen, read out the rules, and ask everyone to verbally agree. Ensure that the consequences are clear for using the platform outside of hours. (9am-8pm) 4. What is up next for the next 2 weeks ahead so young people know what to expect (see pages 5-7 for an overview of the challenge). Allow young people to ask any questions about the session topic.

Team Activity Planning: 30 minutes	<p>MENTOR: Explain to the whole team that you will now be planning how to collaborate for the first and second collaborative Team Activities that will take place outside of the session. There will not be another session until</p>
	<p>the next session so this step is required because communicating and making decisions outside of a session requires a different strategy that must be agreed upon so that everyone knows what they are doing for this activity and how.</p> <ul style="list-style-type: none"> • “IDENTIFY ENTREPRENEURS” TEAM ACTIVITY • “BRAINSTORMING SOCIAL PROBLEMS” TEAM ACTIVITY” <p><i>As a team, collaborate on a creative brainstorm on social problems in your community. Vote on the areas you feel most passionate about as a team, then write down what change you would like to see happen.</i></p> <p>Make sure the teams have the opportunity to talk about how they want to work as a team through the activities e.g. when they want to complete the activities, how to communicate, the role of the project manager, etc. Make sure you allocate each young person a specific week that they are the project manager for the weekly activities and make a note of this.</p> <p>Type up notes for their strategy if this is helpful - it can be included underneath the Team Contract.</p>
Session Close: 5 minutes	<p>MENTOR: Close the session with the opportunity for anyone to ask any remaining questions.</p> <p>Instructor:</p> <p>Facilitate the wrap-up of the session. A quick reminder of what is coming up next and when the next session will be.</p>

MOTIVATIONAL LECTURES LINKS.

<u>TOPIC</u>	<u>SPEAKER</u>	<u>LINK</u>
How to Face Problems In Life	Qasim Ali Shah	https://www.youtube.com/watch?v=OrQte08MI90
Just Control Your Emotions	Qasim Ali Shah	https://www.youtube.com/watch?v=JzFs_yJt-w
How to Communicate Effectively	Qasim Ali Shah	https://www.youtube.com/watch?v=PhHAQEGehKc
Your ATTITUDE is Everything	Tony Robbins Les Brown David Goggins Jocko Willink Wayne Dyer Eckart Tolle	https://www.youtube.com/watch?v=5fS3rj6eIFg
Control Your EMOTIONS	Jim Rohn Les Brown TD Jakes Tony Robbins	https://www.youtube.com/watch?v=chn86sH0O5U
Defeat Fear, Build Confidence	Shaykh Atif Ahmed	https://www.youtube.com/watch?v=s10dzfbozd4
Wisdom of the Eagle	Learn Kurooji	https://www.youtube.com/watch?v=bEU7V5rJTtw
The Power of ATTITUDE	Titan Man	https://www.youtube.com/watch?v=r8LJ5X2ejqU
STOP WASTING TIME	Arnold Schwarzenegger	https://www.youtube.com/watch?v=kzSBrJmXqdg
Risk of Success	Denzel Washington	https://www.youtube.com/watch?v=tbnzAVRZ9Xc

Annexure-III

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	Self & Family background	<p>Danyal Saleem, who lives in Mirpur (AJK), is an example of how hard work and perseverance can reap rich rewards when bidding for projects online.</p> <p>The graphic designer works exclusively on an online freelancing platform and has earned, on average, US\$20,000 per month for the past several months. But this isn't a story of overnight success – Danyal has had to work hard to differentiate himself and stay true to his goal.</p> <p>It was a full year later, in May 2017, when Danyal finally decided to jump in. He signed up for one of the numerous sites that connect designers or coders with people or companies that have small projects, like designing a logo or building a website.</p> <p>He had already started a small business to help pay for his college education, so he was nervous and apprehensive about the decision. "I gave myself two or three months at most. If I didn't succeed, then I would go back to running the business as it was showing potential," he says.</p> <p>If at first, you don't succeed, try try again</p>
2.	How he came on board NAVTTC Training/ or got trained through any other source	Certification in graphic designing from STEPS (NAVTTC partner institute)
3.	Post-training activities	<p>Danyal's area of expertise is in graphic design. In his first month using Fiverr, he pitched mostly for projects centered around logo designing. But it wasn't so simple. In the first few weeks, he didn't hear back from even a single client, despite pitching for dozens of projects.</p> <p>"I needed to understand what worked, so I read blogs, participated in forums, and analyzed profiles of successful freelancers. It was an uphill struggle, but I didn't want to give up," he explains.</p> <p>Danyal says he understands why clients would be apprehensive giving projects to untested freelancers. They</p>

		have hundreds of options to choose from, he
		<p>explains, and to give a project to someone with no experience requires a strong leap of faith.</p> <p>A slow stream of projects started to come Danyal's way. Within a few months, he was landing an average of a hundred projects every month, with a large number of repeat clients. He also expanded the range of his professional services, branching out from logo design to business cards, banners, Facebook cover pages, letterheads, and stationery.</p> <p>But he's had to face his fair share of challenges too. The shoddy state of internet infrastructure in his city, Mirpur, threatened to derail his freelancing career. "Sometimes I haven't had connectivity for two days straight," he explains. "That's unthinkable for someone who makes his livelihood on the internet."</p>
4.	Message to others (under training)	<p>Take the training opportunity seriously Impose self-discipline and ensure regularity</p> <p>Make Hard work pays in the end so be always ready for the same.</p>

Note: Success story is a source of motivation for the trainees and can be presented in several ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful trainee of the institute. He will narrate his success story to the trainees in his own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful trainee Audio-video recording that has to cover the above-mentioned points.*
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning, etc) and narrates his/her story in the teacher's own motivational words.

* *The online success stories of renowned professional can also be obtained from **Annex-II***

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. Attendance:

Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. Character:

Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. Team Work:

The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. Appearance:

Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. Attitude:

Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. Productivity:

Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. Organizational Skills:

Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. Communication:

Written communication, being able to correctly write reports and memos. Verbal communications, being able to communicate one on one or to a group.

9. Cooperation:

Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. Respect:

Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.