



Intensive Code Camp

Training Manual

Full Stack .Net Developer

2024 –2025

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Track Description

Full Stack .NET Developer training program provides advanced theoretical and practical skills. The program combines the study of fundamental aspects of software engineering and programming concepts with a hands-on approach. The students could be promoted for Microsoft Desktop Solution Developer and Microsoft Web Solution Developer Jobs, and could have Microsoft Certified Solutions Developer (MCSD) certificate.

List of Courses

#	Course Name	Lec	Lab	Total	Days
1	Object Oriented Programming using C#	21	21	42	7
2	Client-Side Technologies	24	24	48	8
3	HTML5 & CSS3	9	9	18	3
4	Microsoft SQL Server Programming	24	24	48	8
5	Visual C# .Net	27	27	54	9
6	Linq & Entity Framework	15	15	30	5
7	ASP.Net MVC Core	27	27	54	9
8	ASP.Net Web API	9	9	18	3
9	BootStrap Framework	6	6	12	2
10	Modern JavaScript (ES6+) and TypeScript Fundamentals	15	15	30	5
11	Angular Fundamentals	18	18	32	6
12	Source Control	6	6	12	2
13	Secure coding	6	6	12	2
14	Agile WorkShop	6	0	6	1
15	OS Fundamentals workshop	6	0	6	1
16	Network fundamentals workshop	9	0	9	1.5
17	Introduction to Software testing workshop	6	6	12	2
18	Presentation Skills	18	0	18	3
19	Freelancing	12	0	12	2
20	Communication Skills	12	0	12	2
21	Interviewing Skills	12	0	12	2
Total Conducted Hours (Lectures + Labs)		501			
Project		30			
Total Program Hours		531			

Course Description

ITP - Object Oriented Programming using C#

Course Description

Students learn the concepts and the meaning of Object-Orientation. They will be able to differentiate between Structured Abstract Data Type and Classes data type. They acquire the knowledge of the Encapsulation, Properties, Methods, and Polymorphism and how to

implement these concepts in the most common Object-Oriented programming languages. Furthermore, they acquire the concept of Embedded objects and the different between it and the concept of Inheritance. The types of inheritance will be discussed in details. Students will understand the need of Virtual functions in case of inheritance, and so the overriding concept. Abstract classes and Interfaces will be covered in this course.

Course Objectives

- The course gives the main concepts of Object Oriented Programming
- Explain the need for Data Encapsulation
- Describe and make use of polymorphism
- Describe when to use classes and when to use structures
- Create and use new classes through inheritance and virtual functions

Prerequisites

- N/A

Course Contents

- History of programming: Linear, Structured, and Object-Oriented
- Object-Oriented Terminologies and Concepts
- Starting in Object-Oriented
- Encapsulations and Members' Modifiers
- Polymorphism (function overloading)
- Objects Creation & Deletion
- Static and Instance Members
- Operator overloading
- Embedded objects
- Inheritance
- Overriding

Course Hours

- *Lectures:* 21 Hours
- *Lab.:* 21 Hours
- *Self-Study:* 3 Hours
- *Credit:* 3 Hours

Recommended Reading

- N/A

Evaluation Criteria

- *Lab:* 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - Client-Side Technologies

Course Description

This course will start with basic HTML tags. Students will learn how to create HTML websites and use CSS in building web applications, before diving into client side script capabilities and how to use JavaScript in creating dynamic applications that take full advantage of the browser objects and responds to users' inputs and events, moving to discussing the available object-oriented programming with JavaScript syntax.

Course Objectives

- Knowledge
 - You will have more control over the functionality of your Web page
 - You will learn the skills to make your Web content more interactive
 - You will have scope to create interesting and exciting Web pages
 - Learn object oriented programming using JavaScript
- Skills
 - You will apply to do more control over the functionality of your Web page
 - You will apply to make your Web content more interactive
 - You will apply to create interesting and exciting Web pages
 - creating, compiling and running object oriented JavaScript
- Experience
 - Will gain experience on how to design interactive web pages
 - Creating JSON Files and making AJAX requests using JavaScript
 - building your own library
 - Applying Object Oriented programming concept over client side scripting language using JavaScript

Prerequisites

- N/A

Course Contents

- Introduction to web Technology
- HTML Basics
- Creating HTML Webpage
- HTML Table and Lists
- HTML Forms & Input
- Introduction CSS
- CSS2 Selectors and Properties
- Getting Started with JavaScript
- Values, Variables and Literals
- Control Statements
- Expressions and Operators
- Predefined Functions
- User defined function
- Error Handling & Debugging
- Events and Event Handling

Course Hours

- *Lectures:* 24 Hours
- *Lab.:* 24 Hours
- *Self-Study:* 9 Hours
- *Credit:* 3 Hours

Recommended Reading

- N/A

Evaluation Criteria

- *Lab:* 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - HTML 5 & CSS3

Course Description

This course provides an accelerated introduction to HTML5 new tags, form elements, attributes, input types, CSS3, moving into the web application scripting APIs and how to incorporate HTML5 features in web pages and applications. Besides adding interactivity with JavaScript and enhancing the styling of web application design.

Course Objectives

- Knowledge
 - How to use HTML5 Markup to create your UI
 - Learn to use HTML5 JavaScript API's
 - Understanding of how HTML5 differs from previous specifications.
- Skills
 - Create your beautiful UI
 - Design more flexible and dynamic stylesheets
 - Ability to provide JavaScript alternatives for unsupported features
 - Practical knowledge to implement new HTML5 elements and attributes.
 - Practical knowledge of how to use the audio, video and canvas elements.
 - Practical knowledge of how to implement new CSS3 features
- Experience
 - Experience in developing awesome web and mobile applications UI using HTML5.

Prerequisites

- JavaScript

Course Contents

- HTML5 History/Timeline
- HTML5 Design Principles
- What is (and isn't) HTML5
- Doctype & Root Element
- Syntax & New Element and Attributes
- HTML5 Sections, Containers, Boxes, Shapes, and Text
- Fallback and Polyfills
- Using Script Loader
- Semantic Web & Microdata

Course Hours

- **Lectures:** 9 Hours
- **Lab.:** 9 Hours
- **Self-Study:** 12 Hours
- **Credit:** 2 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - Microsoft SQL Server Programming

Course Description

The course provides high level overview of MS SQL Server and its platforms, also it discusses Transact-SQL as a programming language, how to manage database files as well as how to manage its usage among several users, how to secure your server and backup your files.

Course Objectives

- Knowledge
 - Learn How to write SQL Queries
 - Knowing difference between Database objects
 - learn how to optimize sql queries
- Skills
 - Installing and Configuring SQL Server
 - Maintaining SQL Server Instances
 - Managing SQL Server Security
 - Maintaining a SQL Server Database
 - Performing Data Management Tasks
- Experience
 - obtain experience on Installing and Configuring SQL Server
 - obtain experince on designing and optimizing SQL Queries
 - obtain experience on Managing SQL Server Security

Prerequisites

- Database Fundamentals : <https://www.udemy.com/introduction-to-basic-database-concepts/>

Course Contents

- SQL Server Overview.
- Installing and Configuring SQL Server.
- Introducing SQL Server services.
- Introducing and Configuring Management Studio.
- Introducing built-in Database.
- Transact SQL Statements (DML, DDL).
- Joins
- ERD & Mapping
- Subqueries
- Aggregate Function
- Group by
- Implementing Data Integrity.
- Backing Up and Restore Database.
- Transferring Data.

Course Hours

- **Lectures:** 24 Hours
- **Lab.:** 24 Hours
- **Self-Study:** 12 Hours
- **Credit:** 4 Hours

Recommended Reading

- Database Fundamentals : <https://www.udemy.com/introduction-to-basic-database-concepts/>

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - Visual C# Net

Course Description

Creating Professional Visual C# .NET Programmers.

Course Objectives

- Knowledge
 - Write and understand C# language constructs, syntax and semantics
 - Leverage the major namespaces and classes of the .NET Framework
 - Learn creating, compiling and running object oriented C# programs using Visual Studio
- Skills
 - Programming Under .NET Platform.
 - Event Driven Programming Model.
 - Creating Desktop Applications Using .NET.
 - Deploying .NET Applications

Prerequisites

- Object Oriented Programming using C#
- Microsoft SQL server programming.

Course Contents

- Overview of .NET.
- Code structure - variables, expressions, loops and conditionals.
- Diagnostics - tracing and exceptions.
- Object-orientation.
- Classes - fields, methods, properties, constructors, constants, indexers, etc.
- Inheritance and polymorphism.
- Collections - arrays, lists, etc.
- Other types - interfaces, structures and enumerations.
- Memory management.
- LINQ (Language-Integrated Query) to objects.
- Reflection - attributes and assemblies.
- Configuration, file I/O and serialisation.
- Generics
- XML documentation.
- Resources and localisation.
- Lambda expressions, anonymous methods and events.
- Multi-threading.
- Connecting to databases.
- Commands, parameters and stored procedures.
- Offline data - data sets, data adapters and typed data sets.
- Local transactions.
- Forms and controls.
- Dialog boxes.
- Data-bound controls.
- MDI applications.
- Drawing and printing.
- Drag and drop.

Course Hours

- *Lectures:* 27 Hours
- *Lab.:* 27 Hours
- *Self-Study:* 6 Hours
- *Credit:* 4 Hours

Recommended Reading

- N/A

Evaluation Criteria

- *Lab:* 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - LINQ & Entity Framework

Course Description

This course offers complete coverage of all C# extended features, including LINQ for data manipulation. You gain experience maintaining the inherent object-oriented structure and learn how to map it to the relational paradigm. You also learn how to use specialized C# keywords such as yield and delegate, as well as with the lambda expression operator (=>).

Course Objectives

- Knowledge
 - Learn how to streamline data-centric applications with C# extended features including LINQ
 - Learn how to apply lambda expressions and extension methods for middle-tier processing
- Skills
 - Exploit Language Integrated Query (LINQ) keywords to filter and order data, and leverage LINQ to simplify XML processing
 - Exploit the full capabilities of Microsoft's open source platform for universal data access: Entity Framework (EF)
- Experience
 - Experience in accessing databases using Language Integrated Query (LINQ)
 - Experience in accessing databases using Entity Framework (EF)
 -

Prerequisites

- Visual C# .Net
- Object Oriented Programming using c#
- Microsoft SQL Server Programming

Course Contents

- LINQ
- Introduction
- Harnessing new C# language features
- Employing extension methods for middle-tier data manipulation
- Leveraging LINQ query keywords
- Adapting LINQ to SQL
- Entity Framework
- Introducing the ADO.NET Entity Framework
- Entity Framework Code First
- The Entity Data Model
- The Entity Data Model Inside and Out
- Querying the EDM
- Working with Entities

Course Hours

- **Lectures:** 15 Hours
- **Lab.:** 15 Hours
- **Self-Study:** 0 Hours
- **Credit:** 2 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - ASP.Net MVC Core

Course Description

ASP.NET Core is a cross-platform, high-performance, open-source framework for building modern, cloud-based, Internet-connected applications.

ASP.NET Core MVC is a rich framework for building web apps and APIs using the Model-View-Controller design pattern.

Course Objectives

- Developing Fast, cross platform apps using ASP.Net core MVC.

Prerequisites

- IIS Administration
- Responsive Web Fundamentals
- jQuery
- Bootstrap
- XML Fundamentals
- Visual C# .Net
- Design Patterns
- Entity Framework 6 & Core

Course Contents

- MVC design pattern.
- ASP.Net Core MVC.

Course Hours

- **Lectures:** 27 Hours
- **Lab.:** 27 Hours
- **Self-Study:** 6 Hours
- **Credit:** 4 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - ASP.Net Web API

Course Description

In the world of HTML5, mobile devices, and modern development techniques HTTP has become the default option for building rich, scalable services. The ASP.NET Web API was designed from the ground up to meet the need of developers who want to build HTTP/RESTful services. The API provides a easy to use set of default options, but also provides a deep extensibility infrastructure to meet the demands of any scenario using HTTP.

Course Objectives

- Understanding Representational State Transfer Services • Building and Consuming HTTP/RESTful services.

Prerequisites

- Visual C# .Net
- ASP .NET MVC Core

Course Contents

- Introduction to ASP.Net Web API
 - What is it ?
 - Is Web API REST
 - Web API versus WCF web Frame Work
- Routing
- Assemblies
- Model Binding and Formatters
- Uniform Interfaces
- ASP.Net Web API hosting

Course Hours

- **Lectures:** 9 Hours
- **Lab.:** 9 Hours
- **Self-Study:** 12 Hours
- **Credit:** 2 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - BootStrap Framework

Course Description

This course teaches you the fundamentals of responsive web design and how to create your own responsive layout using the viewport tag and CSS media queries and how to build your own responsive framework. The course will introduce bootstrap framework and how to use it.

Course Objectives

- Knowledge
 - Understand the benefits and the fundamentals of using RWD
 - Learn how to present images in different resolutions adaptively across a wide array of devices
 - Learn how to build your own responsive framework
 - Learn how to use Bootstrap
- Skills
 - You will apply to do more control over the functionality of your Web page
 - You will apply to make your Web content more interactive
 - You will apply to create interesting and exciting Web pages
 - You will be able to build responsive, mobile first web applications that can run on variety of screen sizes on mobile or PC screens
- Experience
 - Will gain experience on how to design interactive web pages

Prerequisites

- HTML5 & CSS3

Course Contents

- Introduction about responsive design
- Responsive web design patterns
- Remote debugging and emulation in the browser
- Viewport
- Sizing the content to the viewport
- CSS media queries
- Breakpoint
- Using the CSS flexbox to modify layout
- Common Responsive Patterns
- Minor break points
- Optimizing text layout
 - font size
 - optimal line length
- Responsive tables, and strategies for dealing with them
- CSS Preprocessors, Less, Sass, and authoring framework
- Bootstrap
-

Course Hours

- **Lectures:** 6 Hours
- **Lab.:** 6 Hours
- **Self-Study:** 3 Hours
- **Credit:** 1 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP –Modern JavaScript (ES6+) and TypeScript Fundamentals

Course Description

This course explores a deep dive into the detailed features of ES6 and methods for organizing your code, both conceptually and literally.

Course Objectives

- Learn about New ES features
- Applying JS Design Patterns
- Applying OOP Concepts in JS Client-side

Prerequisites

- HTML5 & CSS3
- introduction to Web Technologies(HTML& CSS)

Course Contents

- Introduction to ES6.
- Using of let and const.
- Arrow function
- Destructuring
- Rest Parameter and Spread Operator
- Symbol primitive datatype
- New Data Structure (Set, Map,..)
- Classes
- Enhancement in Javascript APIs (String, Array etc.)
- Modules
- Iterators and Generators
- Proxy
- Promise
- Async & await
- New JavaScript release

Course Hours

- **Lectures:** 15 Hours
- **Lab.:** 15 Hours
- **Self-Study:** 0 Hours
- **Credit:** 2 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - Angular Fundamentals

Course Description

This course will teach you the Angular fundamentals required to create testable, MVC-style single page applications using your existing HTML and JavaScript skills, besides learning how to integrate AngularJS directives and expressions into HTML 5 markup and write AngularJS controllers and services to build a complete feature-rich Single Page Web Application

Course Objectives

- Knowledge
 - Understand the design of single-page applications and how AngularJS facilitates their development
 - Elegantly implement Ajax in your AngularJS applications
- Skills
 - Build Angular forms
 - Write AngularJS directives
- Experience
 - Properly separate the model, view, and controller layers of your application and implement them using AngularJS
 - Master AngularJS expressions, filters, and scopes

Prerequisites

- Responsive Web Design
- JavaScript

Course Contents

- Introduction
- Single Page Applications
- Controllers
- Models
- Views
- Expression
- Filters
- Ajax
- Scopes
- Services
- Angular Forms
- Directives

Course Hours

- **Lectures:** 18 Hours
- **Lab.:** 18 Hours
- **Self-Study:** 9 Hours
- **Credit:** 3 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Lab:** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - Source Control

Course Description

This course will teach you about versioning tools , project management and team management.

Course Objectives

- Understand what is code versioning
- Working with Git and Github

Prerequisites

- Client-side Technologies

Course Contents

- Comparing centralized vs. distributed systems
- Understand GIT
- Create a local repository, create a commit, create a remote repository and push commits to a remote repository.
- Git Branching and merging
- Git workflow
- Learn Git, GitHub, and command-line basics

Course Hours

- **Lectures:** 6 Hours
- **Lab :** 6 Hours
- **Self-study:** 3 Hours
- **Credit :** 1 Hour

Recommended Reading

- N/A

Evaluation Criteria

Lab: 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Course Description

ITP - Secure coding

Course Description

The course introduces you to the principles of secure programming. It begins by discussing the philosophy and principles of secure programming, and then presenting robust programming and the relationship between it and secure programming.

Course Contents

- Intro to Cyber Security
- CIA Triad & IAAAA
- Web Security
- OWASP Top 10
- Secure Coding Best Practices

Course Objectives

- Knowledge
 - principles of secure programming
 - eight design principles that govern secure coding and how to apply them to your own work.
 - differentiate between informal, formal, and ad hoc coding methods.

Prerequisites

- C/C++ programming languages

Course Hours

- **Lectures:** 6 Hours
- **Lab.:** 6 Hours
- **Self Study :** 3Hours
- **Credit:** 1Hours

Recommended Reading

- Microsoft SQL Server Materials.

Evaluation Criteria

- **Lab :** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%

Missing 50% of course duration

Course Description

ITP- Agile WorkShop

Course Description

This course emphasizes the rapid realization of system value through disciplined, iterative and incremental software development techniques, and elimination of wasteful practices. Students will study the full spectrum of Agile Methods, including Scrum, Extreme Programming, Lean, Crystal Methods, Dynamic Systems Development Method, and Feature-driven Development. These methods promote teamwork, rich and concise communication, and the frequent delivery of running tested systems containing the highest priority customer features.

Course Objectives

- To learn the fundamental principles and practices associated with each of the agile development methods: Lean, Scrum, eXtreme Programming (XP), Crystal, Feature-driven Development (FDD), Kanban, and Dynamic Systems Development Method (DSDM).
- To impart a thorough understanding of the principles and practices used in agile software development and to explore these techniques by solving problems of student interest..
- To apply the principles and practices of agile software development on a project of interest and relevance to the student.
- To perform in-depth explorations into aspects of agile development that are particularly relevant to each student through independent research and discussion.

Prerequisites

- Clear understanding of the concept of object oriented programming.

Course Contents

- Agile Development Methods Overview.
- Lean Scrum.
- eXtreme Programming (XP).
- Crystal Methodologies.
- Feature-Driven Development (FDD).
- Test-Driven Development (TDD).

Course Hours

- *Lectures:* 6 Hours
- *Lab.:* 0 Hours
- *Self Study :* 9 Hours
- *Credits:* 1 Hours

Recommended Reading

- Software Architecture, by Jiankuan Xing, Xiang Zheng, Zheng Qin.

Evaluation Criteria

- *Project:* 100%

Soft Skills & Free Lancing Description

Bus/EPSK/200 – Effective Presentation Skills

Course Description:

Effective presentation skills are very important to advance your ideas as well as your career. Great content means nothing if it is not packaged and presented in an engaging way. The course provides a systematic and proven strategy for organizing your ideas and information for greatest impact while presenting, and for building strong audience rapport while persuading and influencing to gain acceptance of proposals or new ideas. Carefully planned and executed, this approach delivers an irresistible call to action. The course focuses on instruction and practice in organization, presentation structure, delivery skills, visual design and use, and question-and-answer techniques. Participants will receive personalized, confidential presentation feedback from the instructor.

Course Objectives:

At the end of the training program, participants will be able to:

- Determine the main objectives for a presentation.
- Organizing ideas and information for greatest impact while presenting.
- Prepare and plan for a professional presentation with high impact.
- Recognize and understand different presentation structures and styles, and when and how to use them.
- Build strong audience rapport while persuading and influencing to gain acceptance of proposals or new ideas.
- Build logical and impressive presentation, develop an introduction, capture the audience attention, organize the body of the presentation, use transitions, and conclude the presentation.
- Use visual aids, supporting material, demonstrations and question-and-answer techniques.
- Deliver a presentation with confidence, and use nonverbal communication aids.
- Learn how to overcome stage fright and tension.
- Handle different types of audience effectively, and understand why do audience fail to listen.
- Work productively with colleagues and teams (preparing team presentations).

Course Contents:

- Fundamentals of presentation.
 - Effective presentations
 - Planning a presentation
- Audience analysis and supporting material
- Building presentations
 - Build presentations
 - Develop an introduction
 - Organize the body of the presentation
 - Effective conclusion
- Presentation mechanics
 - Visual aids
 - Understand visual aids
- Presentation process
 - Extemporaneous speaking
 - Preparation for speaking
 - Deliver a presentation
 - Nonverbal communication
- Question-and-answer session
 - Handle questions effectively
 - Handle challenging questions
- Fundamentals of persuasion
 - Understand persuasion
 - Organize a persuasive presentation
 - Methods of persuasion

Course Hours:

- Lectures: 12 Hours
- Lab.: N/A
- Self-Study: 3 Hours
- Credit: 1 Hours

Course Prerequisites:

- Effective Communication Skills.

Recommended Readings:

- N/A

Evaluation Criteria:

- Presentation: 90%
- Class Attendance: 10%

Corrective Action: (Grade out of 60 Marks)

- Failing / missing final assessment: Corrective final assessment.
- Missing 12 hours of the course duration: Corrective written exam.
- Failing / missing final assessment and missing 12 hours of the course duration: Corrective final assessment and corrective written exam.

ESS/FL/100 – FreeLancing

Course Description

Student will learn how to have a free lancer job and create his own profile on the free lancing sites

Course Objectives

Covers, explains and practices on the required skills and knowledge for freelancing and online work (Remotely), and explain the whole freelancing process from creating profile to become and professional freelancer and expanding your work.

Prerequisites

- N/A

Course Contents

Part 1:

- What's freelancing and how it's working?
- Brief about freelancing industry growth and size across the world.
- Most known Freelancing platforms (Global and Arabic websites) and the main differences between them.
 - Focusing on the most important freelancing platforms for each track, for example:
 - For testers: uTest, Testbird, UserTesting, UserBrain, ...
 - For Designers: 99designs, Behance, ...
 - Differences between project based freelancing website, and small services websites:
 - Project based freelancing websites: Upwork, Freelancer, Toptal, Guru, peopleperhour, Mostaqel (Arabic),...
 - Small services freelancing websites: Fivver, EnvatoStudio, Kafil (Arabic), Khamsat (Arabic),...
- Top required skills on freelancing websites.
- Personal skills required for the successful freelancer.
- Working as a freelancer; pros. and cons., and how to overcome the cons.?
- Work-life balance.
- Freelancers' success stories.
- How to prepare your home freelancing work environment and tools?
- Branding yourself online:
 - Write a professional CV
 - Create LinkedIn profile.
 - For Designers: Behance, deviantART, Dribble account.
 - For Developers: github and StackOverFlow profiles.
- Other non-traditional online work and work from home options:
 - Working online from home (Remotely).
 - Working online websites: CrossOver for work, Andela, weworkremotely, Crossworkers, RemotePlatz, Baaeed, internsville ... and stackoverflow / LinkedIn Remote developer jobs.
 - Online marketplace and services websites:
 - Websites for selling scripts, themes, and other services:
 - <https://envato.com>
 - <https://studio.envato.com>
 - <https://codecanyon.net>
 - <https://creativemarket.com>
 - <https://www.codester.com>
 - Plugins, extensions and components development (For developers)
 - Browser (Chrome & Firefox) extensions.
 - Visual studio code plugins.
 - Azure DevOps plugins:
 - Visual studio Marketplace
 - Slack plugins.
 - Shopify plugins
 - Odoo Plugins
 - For designers, websites for selling themes:
 - www.themeforest.net
 - www.templamatic.com
 - www.fantero.com
- For instructors, and who can deliver courses:
 - www.udemy.com
 - www.skillshare.com
 - www.nadrus.com (Arabic website)
 - www.tahiracademy.org (Arabic website)
- Starting your own startup or project, and you can find support from: TIEC, Flat6labs, Sawari ventures ...
- Still prefer working as an Employee, you can check websites for finding work opportunities:
 - LinkedIn, Wuzzuf, ...etc.
 - To know some info about companies before interview or before get hired with them: Glassdoor.
- Introducing MaharaTech online freelancing course.

Part 2:

- Freelancing Basics
 - <https://maharatech.gov.eg/course/view.php?id=7>
- Getting started as a freelancer (Upwork)
 - <https://maharatech.gov.eg/course/view.php?id=9>
- Self-study tasks to be done by the students:
 - Create completed and verified profile on Upwork.
 - Create another completed and verified account on one of main freelancing websites like: Freelancer, Guru, peopleperhour, Mostaqel ...

- Create a profile on one of the small services websites like: Fivver, EvantoStudio, Khamsat, and create at least 3 services on the selected website.
- Create account and Publish theme, script, component or plugin on of the known marketplaces (According the students track), for example: Chrome extension, envato, Themeforest ...
- Apply to some jobs on the selected platforms.
- Optional (Bonus): Get first freelancing job.

Part 3:

- Workshop (Lab):
 - Checking and solve any problems regarding the freelancing profiles of the students, and make sure that they all got their profiles completed.
 - Coaching the students to apply for jobs, writing good proposal and help them to get their first job.
 - Coaching the students to make and upload their first plugin, extension or component to any of the online marketplaces (According the students track).
- Lecture:
 - How to get your first job? And how to write a good proposal.
 - After getting the first job, how to plan and manage the project and handle working and any issues with the client?
 - Tools and websites you may use to manage the project and contact with the client: Slack (for communication with client) , Version control tools (GIT, TFS ...), Agile project management tools and tasking tools (Jira, Trello ...).
 - Rating is the key! How to get a good rate?
 - How to get their money from the freelancing websites (Direct transfer, PayPal, Payoneer)?
 - General guidelines and advice.

Course Hours

- **Lectures:** 12 Hours
- **Lab.:** 0 Hours
- **Self Study :** 3 Hours
- **Credit:** 1 Hours

Recommended Reading

- N/A

Evaluation Criteria

- **Attendance :** 100%

Corrective Action: (Max. Grade will be 60% of total Marks)

There will be a Corrective written exam in the following cases:

- Total grade is less than 60%
- Missing 50% of course duration

Bus/BCSK/100 – Business Communication Skills

Course Description:

Good communication skills are skills that facilitate people to communicate effectively with one another. Effective communication skills are essential for success in most jobs. Effective communication engages the choice of the best communications channel, the technical know-how to use the channel, the presentation of information to the target audience, and the skill to understand responses received from others. Great communicators know how to assess an audience, analyze a situation, and frame a discussion. Self-development, interpersonal skills, mutual understanding, mutual cooperation and trust is also important to set a complete channel of most effective and winning communication skills.

Course Objectives:

At the end of the training program, participants will be able to:

- Understand the meaning of effective communication, functions of communication and the communication process.
- Communicate with individuals in a clear, concise, courteous way.
- Conduct a message using different delivery techniques.
- Choice the best communication channel according to different situations.
- Develop successful verbal, non- verbal, written and oral communication, and recognize the advantages/ disadvantages of each communication type.
- Use body language, facial expressions and voice intonation to emphasize messages.
- Build effective relationships and establish rapport.
- Overcome and deal with different barriers to communications.
- Deal and communicate with individuals from different cultures.
- Adopt active listening and providing feedback skills.
- Use many techniques to enhance the effectiveness of communications and questioning: Open-ended questions, metaphors and illustrations.
- Identify the meaning and application of credibility and trust in communication.
- Observe, interpret and analyze situations based on different perceptions.
- Understand and use different organizational communication flows, and how to choose the best to use.

Course Contents:

- What is Communication?
- Classifications of Communication:
 - Intrapersonal Communication
 - Interpersonal Communication
 - Organizational Communication
- Functions of Communication
- Basic Model of communication
 - Message
 - Encoding
 - Medium
 - Decoding
 - Noise
- Communication Channels
- Modes of Communication
 - Verbal communication
 - Oral Communication
 - Written Communication
 - Nonverbal communication
- Barriers to Communication.
 - Noise
 - Linguistic
 - Culture
 - Emotions
- Cross culture communication
- Emotional Intelligence and attaining emotional control
- Active Listening
- Techniques of Communication
 - Art of Questioning
 - Effective Word
 - Reading Body Language
- The Organizational Communication.
 - Direction of communication within Organization.
 - Channels of communication within Organization.
- Credibility and Trust
- Perception
- Perception Quality
- Enhance Relationships
- Keys to Understanding People

Course Hours:

- **Lectures:** 12 Hours
- **Lab.:** N/A
- **Self-Study:** 12 Hours
- **Credit:** 2 Hours

Evaluation Criteria:

- **Participation:** 90%
- **Class Attendance:** 10%

Corrective Action: (Grade out of 60 Marks)

- Poor Participation: Corrective written exam.
- Missing 12 hours of the course duration: Corrective written exam.

Bus/INTEV/300 - Interviewing Skills

Course Description:

This course exposes students to effective job search techniques with composition of resumes, cover letters and reference sheets, focuses on the pre-interview and interview techniques, and post-interview follow up. The course is designed to enhance students' current interviewing skills, examining techniques to ensure proper interview preparation and increased personal effectiveness. By understanding the different possible elements to interviews and examining what interviewers are looking for, students can identify how their strengths and experience can meet the interview criteria.

Course Objectives:

- At the end of the training program, participants will be able to:
- Understanding the Human Resources Management activities.
 - Understand meaning of recruitment, labor market components, and placement.
 - Hunt an employment opportunity and apply for a job vacancy.
 - Understand the HR selection process.
 - Distinguish between different types of interviews and employment tests.
 - Compose a CV, cover letter and reference sheets.
 - Handle the weaknesses in the CV.
 - Deliver convincing answers to different types of interview questions.
 - Prepare to conduct a professional interview and build rapport with the interviewer.
 - Present themselves in a professional manner during the interview.
 - Learn techniques to help control interview nerves and be confident.
 - Apply interview etiquette, greeting, handshaking and attire.

Course Contents:

- Human Resources Management Activities
- Selection and placement process
- Types of Interviews
 - Traditional job interviews
 - Behavioral interviews
 - Situational Interviews
 - Stress Interviews
- Writing Resume
- CV styles
- Analyzing Jobs and preparing interviews for interviewers.
- Pre-Interviewing
 - How can you prepare yourself for an interview?
 - What to know about the interviewing company?
- Personal appearance
- Greet and Shake hands
- Frequently asked interview questions
- Answering different types of interview question
- Managing Body Language
- Interviewing Do's and Don'ts

Course Hours:

- **Lectures:** 12 Hours
- **Lab.:** N/A
- **Self-Study:** 3 Hours
- **Credit:** 1 Hours

Course Prerequisites:

- Effective Communication Skills
- Effective Presentation Skills

Recommended Readings:

- N/A

Evaluation Criteria:

- **Interviews:** 90%
- **Class Attendance:** 10%

Corrective Action: (Grade out of 60 Marks)

- Failing / missing final assessment: Corrective final assessment.
- Missing 9 hours of the course duration: Corrective written exam.
- Failing / missing final assessment and missing 9 hours of the course duration: Corrective final assessment and corrective written exam.

Operating Systems Fundamentals Workshop

Course Description:

Gives basic information about the important concepts of operating systems, process and scheduling, memory management, file systems, input/output management, Access and Protection, and concept of Virtualization and user interface and shells.

Course Objectives:

This workshop deals with computer organization and operating systems, it aims for a balance between theory and practice. The students will become familiar with the important concepts of operating systems, process management, memory management, file systems, input/output management and virtualization. The way of delivery of this workshop dependent on interactivity methodology by face-to-face discussion technique, to improve the learn ability skills and knowledge acquiring skills.

Course Contents:

- Introduction to Computer System and Operating System (Lect 1)
 - Computer System Components
 - Von Neumann Architecture
 - Computer Operating System
 - Why We Need an OS?
 - Complex and Multiprocessor Systems
 - Some of basics in C Program
 - Multiuser Systems
 - Operating System Components
 - Why Is It Important to Know About the OS?
 - Responsibilities of an OS
- Processes and Scheduling (Lect 1)
 - Introduction to Scheduling
 - Process Concept
 - Process Contents
 - Process States
 - Process Control Block (PCB)
 - Context Switching
 - Scheduling.
- Memory Management (Lect 1)
 - Need of Memory Management
 - Address Binding
 - Logical Address Vs. Physical Address
 - Inter-process Communication
 - Shared Memory Method
 - Message Passing Method
- I/O Management (Lect 1/2)
 - Need of I/O Management
 - I/O Subsystem
 - I/O Devices Categories:
 - Block Devices
 - Character Devices
 - I/O Protocols Categories:
 - Special Instructions I/O
 - Memory-Mapped I/O
 - Direct Memory Access (DMA)
 - Interrupt Handling Mechanisms
 - Synchronous Vs. Asynchronous I/O
 - Synchronization and Critical Sections
 - Mutex
 - Semaphore
 - Deadlocks.
- File Systems (Lect 2)
 - Need for File Systems
 - File Concept
 - Directory Name Space

- Access Control
- Concurrency.
- Access and Protection (Lect 2)
 - Access and Protection
 - User Mode and Kernel Mode (Rings).
- Virtualization and User Interface and Shells (Lect 2)
 - Virtualization
 - Protection
 - User Interface and Shell.

Workshop Hours:

Lectures: 6 Hours

Labs : 0 Hours

Selfstudy: 9 Hours

Credit: 1

Network fundamentals workshop

Description

This workshop is an entry level to understand the basics knowledge to Computer Networks and Cybersecurity in order to help students how to deal with the computer networks and protect their devices from threats

Course topics

- Network Essentials
 - Computer Networks Definition and Basic Terminologies
 - TCP/IP Protocol Suite
- Cyber Security Essentials
 - Information Security Goals
 - Risks & Threats
 - Security Defenses
 - Encryption
- Distributed Systems
 - Distributed Systems overview
 - Types of Distributed System
 - Distributed System Examples
 - Cloud computing

Learning Outcomes

- Know about computer networks and network protocols
- Know about cyber security and security goals
- Know about methods of attacks and risks
- Know about attacks mitigation and encryption
- Know about Distributed System
- Know about Types of Distributed System and examples
- Know about Cloud computing service models and deployment models
- Enhance students skills by doing some practices on some topics

Course Materials

Required Materials

- Course PTT

- VMware® Workstation 15 Pro
- ISO image of any OS

Optional Materials

Required Text

Programming paradigms: Essential Computer Science- A Programmer's Guide to Foundational Concepts

Assessment and examination

Participation and exercise completion

Additional Information and Resources

- Cisco Student Guide ICND1
- TCP/IP Protocol Suite "Behrouz A. Forouzan 4th Edition"
- Distributed Systems "van Steen, Maarten, Tanenbaum, Andrew S."
- <https://maharatech.gov.eg/enrol/index.php?id=22>
- <https://maharatech.gov.eg/enrol/index.php?id=37>

Workshop Hours:

Lectures: 9 Hours

Lab.: 0 Hours

Introduction to Testing Workshop

Description

Introduction to Software Testing Fundamentals and unit testing

Course topics

- Introduction to software testing
 - Why we need testing as developer
- Testing types
 - Static & Dynamic Testing
 - Functional & Non-Functional
- Testing levels
 - Unit/Integration/System/Acceptance
- Testing techniques
 - Black box
 - White box
 - Experience based technique
- Unit testing and code quality
- Unit testing frameworks (Track Specific)
- TTD
- Code reviews & testing workshop

Learning Outcomes

- Know about Why we need testing as developer
- Know about Testing types
- Know about Testing levels
- Know about Testing techniques
- Learn Unit testing and code quality
- Implement Unit testing using frameworks (Track Specific)
- Implement TTD
- Participate in Code reviews & testing workshop
-

Course Materials

Required Materials

Course PTT

- Junit installed on platform IDE

- Student's Sample code to test

Optional Materials

Required Text

[Programming paradigms: Essential Computer Science- A Programmer's Guide to Foundational Concepts](#) Appendix A&B

Assessment and examination

- Code review & Unit testing for it (using their specific platform) from their assignments

Additional Information and Resources

www.softwaretestinhelp.com

www.testbytes.com

www.ministryoftesting.com

Workshop Hours:

Lectures: 6 Hours

Lab.:
6
Hours