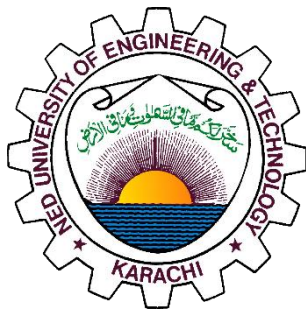


People's Information Technology Programme (PITP)
Phase II - Batch I
(22-Sep-2025 to 14-Nov-2025) | (Monday to Friday)
Lesson Planner



Empowering For Professional Excellence



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1. WEB DEVELOPMENT



Week	Days	Topics
Week 01	Day 1	Overview of the Internet, Web, and Browsers
	Day 2	Understanding the Client-Server Model
	Day 3	Introduction to Web Development Tools (IDEs, Browsers, Inspect Tools)
	Day 4	Setting up a Development Environment (VS Code)
	Day 5	Structure of an HTML Document, HTML Tags
	Activities & Deliverables	Build a simple HTML webpage demonstrating the use of basic HTML tags and structure.
Week 02	Day 1	Forms and Form Elements (input types, validation)
	Day 2	HTML tags (tables, list)
	Day 3	Introduction to CSS and its Types (inline, internal, external), CSS Selectors, Properties, and Specificity
	Day 4	Box Model and Layout Techniques, Styling Text, Colors, Backgrounds, and Borders
	Day 5	Positioning and Creating Simple Page Layouts
	Activities & Deliverables	Design a styled webpage using forms, tables, lists, and CSS layouts.
Week 03	Day 1	Introduction to JavaScript and Its Role in Web Development
	Day 2	Data Types, Variables, and Operators
	Day 3	Conditional Statements and Loops
	Day 4	Functions and Scope
	Day 5	Arrays and Objects
	Activities & Deliverables	Create an interactive webpage where JavaScript handles basic calculations
Week 04	Day 1	DOM Tree and Element Selection (getElementById, querySelector)
	Day 2	Event Handling and Listeners
	Day 3	Modifying DOM Elements Dynamically
	Day 4	Form Validation using JavaScript
	Day 5	Midterms
	Activities & Deliverables	Develop a simple form with JavaScript-based validation and dynamic DOM updates.
Week 05	Day 1	Concepts of Responsive Web Design
	Day 2	Transitions
	Day 3	Animations
	Day 4	Understand the role of PHP in server-side web development
	Day 5	PHP Syntax and Tags
	Activities & Deliverables	Create a responsive webpage with basic CSS animations and integrate a simple PHP script.
Week 06	Day 1	Variables and Data Types
	Day 2	Operators (Arithmetic, Comparison, Logical)
	Day 3	Control Structures (if, else, switch)
	Day 4	Loops (for, while etc)
	Day 5	Write PHP scripts to handle form data and server requests using GET and POST
	Activities & Deliverables	Build a contact form that sends and retrieves data using PHP GET & POST methods.



Week 07	Day 1	Introduction to Databases and Data Models
	Day 2	Connect and interact with a database using PHP (MySQL or MongoDB)
	Day 3	Performing CRUD Operations
	Day 4	Data insertion in DB using HTML form
	Day 5	Signup/Login Page
	Activities & Deliverables	Develop a signup/login system connected to a MySQL database performing CRUD operations.
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Soft Skills-Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Soft Skills-Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Soft Skills- Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Finals
	Activities & Deliverables	Prepare a personal portfolio website, optimize it for launch, and present it as part of the final assessment.



2. E-COMMERCE



Week	Day	Topic
Week 1	Day 1	Overview of E-commerce & Business Models (B2B, B2C, C2C)
	Day 2	Benefits & Challenges of E-commerce
	Day 3	E-commerce Platforms Comparison (WooCommerce, Shopify, Magento)
	Day 4	Domain Names & Web Hosting Basics
	Day 5	Key Components of a Successful E-commerce Website
	Tasks & Activities	Research 3 real-world E-commerce stores. Identify their business model (B2B/B2C/C2C), hosting, and domain provider. Present findings in class.
Week 2	Day 1	Installing WordPress & WooCommerce
	Day 2	Shopify Dashboard & Settings Overview
	Day 3	Selecting & Customizing Store Themes
	Day 4	Setting Store Information: Currency, Tax & Shipping
	Day 5	Managing Pages, Menus & Store Policies
	Tasks & Activities	Create a demo online store (WooCommerce or Shopify) with proper currency, tax, and shipping settings. Share the store URL with peers.
Week 3	Day 1	Adding Simple, Variable & Digital Products
	Day 2	Product Descriptions, Images & Pricing Strategies
	Day 3	Inventory Management & Stock Keeping
	Day 4	Categories, Tags & Customer Purchase Journey
	Day 5	Order Management: Viewing, Fulfilling, Cancelling Orders
	Tasks & Activities	Add 5 sample products with descriptions, images, pricing & categories. Simulate a customer order and process it.
Week 4	Day 1	Introduction to Online Payment Methods
	Day 2	Setting up PayPal & Stripe (International)
	Day 3	Setting up JazzCash & Easypaisa (Local)
	Day 4	Payment Gateway Sandbox Testing
	Day 5	Mid Term Exam
	Tasks & Activities	Integrate one payment gateway in sandbox mode and process a test payment on your demo store.
Week 5	Day 1	Basics of SEO for E-commerce Sites
	Day 2	Keyword Research & On-page Optimization
	Day 3	SEO-friendly Product Titles & Descriptions
	Day 4	Social Media & Google Ads for E-commerce
	Day 5	Creating Facebook & Instagram Ads + Budgeting Campaigns
	Tasks & Activities	Optimize 3 product pages for SEO + create 1 sample ad campaign. Present SEO improvements & ad designs.
Week 6	Day 1	Understanding Customer Behavior & Loyalty
	Day 2	Discount Coupons & Promotional Offers
	Day 3	Email Marketing Platforms (Mailchimp, Klaviyo)
	Day 4	Designing Email Campaigns & Automation
	Day 5	Segmentation, Personalization & Customer Support
	Tasks & Activities	Create a discount coupon + design an email campaign in Mailchimp. Send the email to test accounts & analyze engagement.
Week 7	Day 1	Introduction to Web Analytics (Google Analytics, Reports)



	Day 2	Tracking Traffic, Conversions & Sales Funnel
	Day 3	Identifying High-performing Products & Pages
	Day 4	A/B Testing, Speed & Mobile Optimization
	Day 5	Cart Abandonment & Recovery Strategies + Final Project
	Tasks & Activities	Launch a fully functional mini E-commerce store with products, payment gateway, SEO, ads, and email campaign.
Week 8	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills, ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Examination
	Tasks & Activities	Submit project . Final presentation of project and Final Examination



3. DIGITAL MARKETING



Week	Days	Topics
WEEK 1	Day 1	<ul style="list-style-type: none"> Digital Marketing Definition What is Digital Marketing? Scope and Career Opportunities 4 Ps of Digital Marketing Marketing Funnel Traditional Marketing vs. Digital Marketing
	Day 2	<ul style="list-style-type: none"> Key Components of a Digital Marketing Strategy Understanding Target Audience, Buyer Personas and Customer Journey Keyword Analysis & Research
	Day 3	<ul style="list-style-type: none"> SWOT Analysis Competitor Analysis Overview of Digital Channels (SEO, SEM, Social Media, Email, Content) Introduction to Tools: Google Workspace, Canva, ChatGPT, Buffer, etc.
	Day 4	<ul style="list-style-type: none"> Meta Ads Library What is Branding? Branding vs Marketing Types of Logos
	Day 5	<ul style="list-style-type: none"> Chat GPT for content generation, keyword research and content writing. Prompt Engineering, how to write prompt?
	Activities & Deliverables	Class tasks to find target audience, do competitor research, SWOT analysis and to a Branding for a brand.
WEEK 2	Day 1	<ul style="list-style-type: none"> Overview of Platforms: Facebook, Instagram, LinkedIn, Twitter, TikTok Creating Business Profiles and Pages Concept of Page vs Account Meta Business Suite Facebook vs Meta: Difference
	Day 2	<ul style="list-style-type: none"> Content Planning and Calendar Creation How to Make Social Media Strategies
	Day 3	<ul style="list-style-type: none"> Paid Advertising on Facebook & Instagram (Meta Ads Manager) Meta Ads Objectives Audience Creation Budget Strategies
	Day 4	<ul style="list-style-type: none"> Targeting and Retargeting Strategies Organic Growth vs. Paid Growth Social Media Tools: Hootsuite, Buffer
	Day 5	<ul style="list-style-type: none"> Social Media Posts Size & Design Post Designing on Canva
	Activities & Deliverables	Class tasks to Create a content calendar, create meta audience for Ads and to practice for post designing on Canva
WEEK 3	Day 1	<ul style="list-style-type: none"> Introduction to Paid Advertising and Google Ads Ecosystem Creating a Google Ads Account and Campaign Types (Search, Display, Video)
	Day 2	<ul style="list-style-type: none"> Understanding Ad Auction, Quality Score, and Bidding Creating Effective Ads (Headlines, Descriptions, CTAs)
	Day 3	<ul style="list-style-type: none"> Keyword Match Types and Negative Keywords Tracking Conversions and ROI

	Day 4	<ul style="list-style-type: none"> Importance of Content in Digital Marketing Types of Content: Blogs, Videos, Infographics, Reels, Case Studies
	Day 5	<ul style="list-style-type: none"> Creating Engaging & SEO-Friendly Content Content Planning and Scheduling Tools (Trello, Notion, Google Calendar)
	Activities & Deliverables	Create a Demo Basic Google Ads Campaign
WEEK 4	Day 1	<ul style="list-style-type: none"> Introduction to Email Marketing Platforms (Mailchimp, Brevo) Building Email Lists and Designing Campaigns
	Day 2	<ul style="list-style-type: none"> Segmentation, Personalization, and Automated Drip Campaigns Email Marketing KPIs and Best Practices
	Day 3	<ul style="list-style-type: none"> Introduction to Influencer Marketing Identifying the Right Influencers for a Brand
	Day 4	<ul style="list-style-type: none"> Outreach, Collaboration, and ROI Measurement Legal and Ethical Aspects of Influencer Marketing
	Day 5	Mid Term Examination
	Activities & Deliverables	Create a Basic email Template
WEEK 5	Day 1	<ul style="list-style-type: none"> Basics of Affiliate Marketing and Key Platforms (Amazon, Daraz, Impact) Creating and Managing Affiliate Campaigns Tracking Sales, Commission Models, and Reporting
	Day 2	<ul style="list-style-type: none"> Mailchimp Introduction How to create a email template Audience on mailchimp
	Day 3	<ul style="list-style-type: none"> Setting up the email campaign Newsletter section on website
	Day 4	<ul style="list-style-type: none"> Concept of Website Domain Names & Web hostings
	Day 5	<ul style="list-style-type: none"> Concept of cloud and servers Wordpress installations and plugins
	Activities & Deliverables	Create and Launch a Simple Affiliate Marketing Email Campaign for a Website
WEEK 6	Day 1	<ul style="list-style-type: none"> Importance of Data in Digital Marketing Setting Up and Understanding Google Analytics Key Metrics: Traffic Sources, Bounce Rate, Time on Page, Goals
	Day 2	<ul style="list-style-type: none"> Google Search Console Setup Using Google Tag Manager for Conversion Tracking Setting Up Custom Dashboards and Reports Using Insights from Analytics to Improve Campaigns Introduction to UTM Parameters and Campaign Tracking Measuring ROI and Preparing Performance Reports
	Day 3	<ul style="list-style-type: none"> Search Intent Google EEAT Algorithms How Search Engine Works Concept of Crawlers Crawling in SEO

	Day 4	<ul style="list-style-type: none"> ON Page SEO Alt Tags HTML Heading form H1 to H6 Meta Data tags Internal Linking
	Day 5	<ul style="list-style-type: none"> Schema Markup Permalink Canonical tags SSL & Website Security
	Activities & Deliverables	Do Keyword Research and setup Yoast SEO Plugin
WEEK 7	Day 1	<ul style="list-style-type: none"> Breadcrumb navigation Robot.txt XML sitemap 404 page optimization Pagination
	Day 2	<ul style="list-style-type: none"> Off page SEO Back Linking Guest Posting Blog Writing
	Day 3	<ul style="list-style-type: none"> Technical SEO Local SEO
	Day 4	<ul style="list-style-type: none"> Google Business Profile Setup Pin your business to map
	Day 5	SEO Auditing and Tools (Google Search Console, Ahrefs, SEMrush Basics)
	Activities & Deliverables	keyword Analysis for blogs, and website content
WEEK 8	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Examination
	Activities & Deliverables	Softskills training, Final Examination and Presentation



4. SOCIAL MEDIA MANAGEMENT



Week	Day	Topic
Week 1	Day 1	Introduction to Social Media & Its Evolution
	Day 2	Overview of Major Platforms: Facebook, Instagram, LinkedIn, X, TikTok, YouTube
	Day 3	Platform-Specific Audiences & Content Formats
	Day 4	Current Trends: Reels, Shorts, Stories, Hashtags
	Day 5	Platform Algorithms, Branding (Personal vs. Business), Target Audiences & Competitor Analysis
	Tasks & Activities	Research 3 competitors on Instagram/Facebook. Identify their target audience, type of content, and engagement level. Prepare a short comparison report.
Week 2	Day 1	Basics of Digital Branding (Logo, Colors, Fonts, Brand Voice)
	Day 2	Types of Content: Images, Videos, Carousels, Stories, Live Sessions
	Day 3	Tools for Content Creation (Canva, CapCut, Adobe Express)
	Day 4	Writing Captions & Crafting CTAs
	Day 5	Content Calendars, Scheduling, Storytelling & Feed Aesthetics
	Tasks & Activities	Design a mini content kit (logo, color palette, 3 branded posts). Create one carousel + one story using Canva or CapCut.
Week 3	Day 1	Introduction to Paid Advertising
	Day 2	Setting Up Business Accounts & Ad Managers
	Day 3	Types of Ads (Image, Video, Carousel, Story Ads)
	Day 4	Audience Targeting: Interests, Demographics, Custom & Lookalike
	Day 5	Budgeting, Campaign Objectives & Optimization
	Tasks & Activities	Create a mock ad campaign (choose an objective, audience, and format). Prepare ad visuals and write ad copy.
Week 4	Day 1	Building & Nurturing Online Communities
	Day 2	Engagement: Comments, Messages, Polls
	Day 3	Managing Feedback & Responding Professionally
	Day 4	Handling Trolls, Negative Comments & Crises
	Day 5	Community Guidelines, Social Listening & Case Studies
	Tasks & Activities	Draft a community engagement plan. Role-play handling a negative comment/troll. Write 3 sample professional responses.
Week 5	Day 1	Platform Insights (Meta, LinkedIn, TikTok, YouTube)
	Day 2	Key Metrics: Reach, Impressions, Engagement, CTR
	Day 3	Analyzing Post & Campaign Performance
	Day 4	Identifying High-Performing Content & Replication Strategy
	Day 5	Reports, SMART Goals & Growth Approaches
	Tasks & Activities	Analyze insights of any Instagram/Facebook page. Create a short report with best-performing post, engagement trends, and 2 recommendations for growth.
Week 6	Day 1	Scheduling Tools (Meta Business Suite, Buffer, Hootsuite, Later)
	Day 2	Automating Tasks & Publishing
	Day 3	AI Tools for Captions, Hashtags & Content Ideas
	Day 4	Social Media CRM & Comment Management
	Day 5	Collaboration, Workflows & Best Practices
	Tasks & Activities	Use a free scheduling tool to plan 1 week of posts. Generate 5 captions with AI, test hashtags, and prepare a publishing calendar.



Week 7	Day 1	Ads, Sponsorships & Collaborations
	Day 2	Affiliate Marketing & Product Endorsements
	Day 3	Creating & Selling Digital Products/Services
	Day 4	Instagram Shops, Marketplace, Paid Communities
	Day 5	Influencer Partnerships + Legal & Financial Considerations
	Tasks & Activities	Create a monetization plan for a chosen niche. Suggest 2 collaboration ideas, 1 product to sell, and 1 influencer to partner with.
Week 8	Day 36	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 37	Effective principles of oral and written communication, Listening skills, ethics
	Day 38	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 39	Employment interviews- theory, discussion, pair interview simulation, group simulation,
	Day 40	Final Examination
	Tasks & Activities	Final presentation of project and Final Examination



5. PYTHON DEVELOPMENT



Week	Day	Topic
Week 01	Day 1	Overview of programming, Python's role, and setting up Python with IDLE and VS Code.
	Day 2	Writing and Executing Python Scripts
	Day 3	Understanding Python Syntax and Code Structure
	Day 4	Introduction to IDEs, Code Editors, and Debugging Tools
	Day 5	Comments and Code Readability Best Practices
	Activities & Deliverables	Practice Problems
Week 02	Day 1	Working with Basic Data Types: int, float, string, bool
	Day 2	Type conversion and casting, along with variables and naming conventions.
	Day 3	Arithmetic, Assignment, Comparison, Logical, and Bitwise Operators
	Day 4	Working with Strings: Methods, Formatting, and Slicing
	Day 5	Introduction to Lists, Tuples, Sets, and Dictionaries
	Activities & Deliverables	Practice Problems based on Lists, Tuples and Strings
Week 03	Day 1	Conditional Statements (if, elif, else)
	Day 2	Loops: for and while Loops with Range and Iterables
	Day 3	Introduction to Functions: Defining and Calling Functions
	Day 4	Parameters, Arguments, and Return Values
	Day 5	Lambda Functions and Recursion
	Activities & Deliverables	Practice Problems based on Loops and Functions
Week 04	Day 1	Introduction to OOP Concepts: Class, Object, Inheritance, Polymorphism
	Day 2	Defining Classes and Creating Objects
	Day 3	Instance vs Class Variables and Methods
	Day 4	Method Overriding and Super Function
	Day 5	Mid Term
	Activities & Deliverables	Practice Problems based on Classes
Week 05	Day 1	Reading from and Writing to Text and CSV Files
	Day 2	File Modes and File Pointer Methods
	Day 3	Working with JSON Files
	Day 4	Introduction to Databases and SQL
	Day 5	Executing CRUD Operations using Python
	Activities & Deliverables	Practice Problems based on dealing with CSV files
Week 06	Day 1	Introduction to Web Scraping and Ethical Considerations
	Day 2	Using requests and BeautifulSoup Libraries
	Day 3	Extracting Data from Static Web Pages
	Day 4	Introduction to APIs and JSON Format
	Day 5	Making API requests



	Activities & Deliverables	Practice Problems based on Web Scrapping tasks
Week 07	Day 1	Making API Requests using requests Module
	Day 2	Parsing and Using API Data
	Day 3	Authentication and security basics for APIs in Python
	Day 4	Data Analysis with Pandas
	Day 5	Data Analysis with Matplotlib
	Activities & Deliverables	Creating Charts and Graphs to Analyze Trends
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Project Presentation & Wrap-up
	Activities & Deliverables	Final Project Presentation & Wrap-up



6. GRAPHIC DESIGNING AND UI/UX DESIGN



Week	Day	Topic
Week 1	Day 1	Introduction to Graphic & UI/UX Design
	Day 2	Overview of Design Disciplines: Print, Digital, UI/UX
	Day 3	Principles of Design: Balance, Contrast, Alignment, Hierarchy
	Day 4	Introduction to Industry Tools: Photoshop, Illustrator, Figma
	Day 5	File Types, Resolution, Design Thinking & Creative Process
	Tasks & Activities	Students discuss the role of designers in groups and share examples of good/bad designs, Collect 3 examples of each design discipline, analyze posters/flyers for design principles.
Week 2	Day 1	Photoshop Interface & Workspace Customization
	Day 2	Working with Layers
	Day 3	Masks & Blending Modes
	Day 4	Photo Editing & Retouching
	Day 5	Color Correction & Adjustment Layers
	Tasks & Activities	Submit edited photo with retouching, Create a poster using at least 3 layers and blending modes, Share before/after image color correction.
Week 3	Day 1	Background Removal Techniques
	Day 2	Creating Banners
	Day 3	Poster Design
	Day 4	Mockup Creation
	Day 5	Exporting for Web, Print, Social Media
	Tasks & Activities	Submit banner design for a product/brand, Submit event poster design , Export mockup files for review.
Week 4	Day 1	Vector vs Raster Graphics
	Day 2	Working with Shapes & Paths
	Day 3	Using Pen Tool & Anchor Points
	Day 4	Designing Icons & Infographics, Artboards, Symbols, Exporting
	Day 5	Mid Term Examination
	Tasks & Activities	Submit icon set (3–5 icons), Complete pen tool tracing exercise, Create a simple infographic with vector graphics.
Week 5	Day 1	Importance of Typography, Font Families
	Day 2	Font Pairing, Spacing, Readability
	Day 3	Introduction to Color Theory
	Day 4	Color Schemes & Psychology
	Day 5	Brand Identity: Logos, Business Cards, Letterheads
	Tasks & Activities	Submit typography poster , Complete color wheel & schemes exercise, Begin branding kit with logo + letterhead, Create a sample text poster with paired fonts, Start mini-branding project: logo + stationery.
Week 6	Day 1	Logo Design Process (sketching to execution)
	Day 2	Brand Guidelines & Usage Rules
	Day 3	Social Media Graphics: Facebook & Instagram
	Day 4	YouTube & LinkedIn Graphics
	Day 5	Canva for Quick Design Projects
	Tasks & Activities	Submit logo design , Submit social media kit (post, story, banner, thumbnail), Submit brand guideline sheet.
Week 7	Day 1	Flyers & Posters + Brochures & Packaging



	Day 2	Print Considerations: Bleed, CMYK, DPI + Exporting Print Files
	Day 3	Basics of UI Design (Layout, Grids)
	Day 4	UX Fundamentals: User Flow & Wireframing + Prototyping in Figma/Adobe XD
	Day 5	UI Components: Buttons, Menus, Forms + Mini App/Web Layout + Portfolio Development & Final Presentation
	Tasks & Activities	Submit flyer + brochure in print-ready format, Create a wireframe for a mobile app, Compile full design portfolio
Week 8	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills, ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation,
	Day 5	Final Examination
	Tasks & Activities	Submit UI project . Final presentation of project and Final Examination



7. MOBILE APP DEVELOPMENT

Week	Day	Topic
Week 01	Day 1	Understanding Mobile Application Development and Its Significance
	Day 2	History of Mobile Application development and its evolution
	Day 3	Applications of Mobile Applications in various fields & Its Job Market
	Day 4	Introduction to Mobile Application Development, Overview of Mobile Application, Why Choose Mobile Application Development
	Day 5	Definitions and Key Concepts
	Activities & Deliverables	Prepare a timeline highlighting the key milestones in the evolution of mobile application development.
Week 02	Day 1	Native vs Hybrid vs Cross-Platform Apps
	Day 2	Understanding Mobile App Architecture
	Day 3	Tools and IDEs: Android Studio, Xcode, VS Code
	Day 4	iOS vs. Android
	Day 5	Basics of User Interface (UI) and User Experience (UX)
	Activities & Deliverables	Install any one IDE (Android Studio, Xcode, or VS Code) and create a basic "Hello World" mobile app.
Week 03	Day 1	Mobile Design Guidelines for Android & iOS
	Day 2	Designing Wireframes and Prototypes (Figma/Adobe XD)
	Day 3	Responsive Layouts and Device Compatibility
	Day 4	Accessibility and Usability Standards + Design-to-Code Workflow
	Day 5	Setting Up Android Studio and Emulator
	Activities & Deliverables	Design a simple app layout that automatically adjusts to multiple screen sizes and test it on at least two different emulators.
Week 04	Day 1	Activity Lifecycle and Intents
	Day 2	Layouts, Views, and UI Components
	Day 3	Event Handling and User Input
	Day 4	Navigation and Fragment Management
	Day 5	Data Storage: Shared Preferences
	Activities & Deliverables	Develop a simple Android app that takes user input from a text field and displays it on the screen when a button is clicked.
Week 05	Day 1	SQLite Database Integration
	Day 2	Simple Project 1 – Calculator App & Simple Project 2 – To-Do List App
	Day 3	Introduction to Xcode and Swift Language
	Day 4	Creating Simple iOS Interfaces
	Day 5	Views, Controllers, and Storyboards
	Activities & Deliverables	Develop a basic calculator app for performing arithmetic operations and a to-do list app to add, edit, and delete tasks.
Week 06	Day 1	Sample iOS App Development
	Day 2	Introduction to Cross-Platform Frameworks
	Day 3	Setting Up Flutter with Dart / React Native with JS
	Day 4	Creating UI Components and Layouts
	Day 5	State Management and Navigation



	Activities & Deliverables	Develop a basic iOS app using Swift in Xcode that displays a welcome message on the home screen.
Week 07	Day 1	Platform Integration (Camera, Location, etc.)
	Day 2	REST APIs and JSON – Understanding & Fetching Data
	Day 3	Displaying Dynamic Data in Apps
	Day 4	Firebase Integration (Realtime DB / Firestore)
	Day 5	Authentication and Session Handling (Firebase Auth)
	Activities & Deliverables	Develop an app that fetches live weather data from a public API in JSON format and displays it on the screen.
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation & group simulation
	Day 5	Final Project Presentation & Wrap-up
	Activities & Deliverables	Final Project Presentation & Wrap-up



8. DATABASE MANAGEMENT



Week	Day	Topic
Week 01	Day 1	Database Concepts & Models
	Day 2	Introduction to Databases and Their Importance
	Day 3	Types of Databases: Relational vs Non-Relational
	Day 4	Overview of DBMS vs RDBMS
	Day 5	Data Models: Hierarchical, Network, Relational, Object-Oriented
	Activities & Deliverables	Lab: Create a report on databases' importance, classify databases, Draw an ER diagram
Week 02	Day 1	SQL Fundamentals (CRUD Operations)
	Day 2	Introduction to SQL and Database Tools (MySQL, SQL Server)
	Day 3	Creating Databases and Tables
	Day 4	Inserting, Updating, and Deleting Records (CRUD)
	Day 5	Retrieving Data using SELECT Statements
	Activities & Deliverables	Lab: Install a database tool, Create database and tables, Perform CRUD operations
Week 03	Day 1	Relational Database Design & Normalization
	Day 2	Primary Keys, Foreign Keys, and Indexes
	Day 3	Relationships: One-to-One, One-to-Many, Many-to-Many
	Day 4	Designing Efficient Database Schemas
	Day 5	Functional Dependencies and Data Anomalies
	Activities & Deliverables	Lab: Normalize dataset up to 3NF, Create ER diagram, Explain relationships
Week 04	Day 1	Advanced SQL Queries & Joins
	Day 2	Aggregate Functions (SUM, AVG, COUNT, MAX, MIN)
	Day 3	Grouping and Filtering with GROUP BY and HAVING, Subqueries: Correlated and Non-Correlated
	Day 4	Inner Joins, Left/Right Joins, Full Joins, Self Joins
	Day 5	MID TERM
	Activities & Deliverables	Lab: Write queries using aggregate functions, JOINS, and subqueries
Week 05	Day 1	Stored Procedures & Triggers
	Day 2	Introduction to Stored Procedures and Functions
	Day 3	Writing and Executing Stored Procedures with Parameters
	Day 4	Creating and Using Triggers: BEFORE, AFTER Events
	Day 5	Implementing Business Logic at Database Level
	Activities & Deliverables	Lab: Create a stored procedure, Implement a trigger, Submit SQL scripts
Week 06	Day 1	Database Security & Performance Optimization
	Day 2	User Roles, Privileges, and Access Controls
	Day 3	Data Backup and Recovery Strategies
	Day 4	Protecting Against SQL Injection and Other Threats
	Day 5	Query Optimization Techniques
	Activities & Deliverables	Lab: Set user roles, Perform backup/restore, Demonstrate SQL injection prevention
Week 07	Day 1	Data Warehousing & BI Tools, Distributed Data Stores
	Day 2	OLTPs, ETL Process



	Day 3	Schemas (Star, Snowflake), Fact & Dimension Tables
	Day 4	OLAP & Data Cube, SQL Server Integration Services (SSIS)
	Day 5	SQL Server Analysis Services (SSAS), SQL Server Reporting Services (SSRS)
	Activities & Deliverables	Lab: Design star schema, Create ETL pipeline, Build SSRS report
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Project Presentation & Wrap-up
	Activities & Deliverables	Final Project Presentation & Wrap-up



9. JAVA DEVELOPMENT

Week	Day	Topic
Week 01	Day 1	What is Java? A deep dive into the core components: the JVM (Java Virtual Machine), JRE (Java Runtime Environment), and JDK (Java Development Kit).
	Day 2	Setting Up Your Environment: A practical guide to installing the JDK and configuring a popular IDE like IntelliJ IDEA or Eclipse.
	Day 3	Basic Syntax, Data Types, and Variables: Understanding the fundamental building blocks of a Java program, including primitive data types and variable declaration.
	Day 4	Operators and Expressions: Learning to use arithmetic, relational, logical, and bitwise operators to perform operations.
	Day 5	Control Flow Statements: Mastering if-else, switch, and ternary operators to control the flow of execution in your code.
	Activities & Deliverables	Write and compile a "Hello, World!" program. Deliverable: A working .java file that prints a simple message to the console.
Week 02	Day 1	Classes and Objects: The core of Java's OOP paradigm. Understanding how to define a class and instantiate objects from it.
	Day 2	Constructors and Methods: Exploring how constructors initialize objects and how methods define object behavior.
	Day 3	Encapsulation: Learning about access modifiers (public, private, protected) to hide data and protect your objects.
	Day 4	Inheritance and Polymorphism: Understanding how to create a hierarchy of classes and how objects can take on many forms.
	Day 5	super and this Keywords: A closer look at these essential keywords for referring to a parent class and the current object.
	Activities & Deliverables	Create a simple Car class with properties (e.g., color, make) and methods (e.g., startEngine(), accelerate()). Deliverable: A .java file with the Car class and a main method that creates and uses two Car objects.
Week 03	Day 1	Abstract Classes and Interfaces: Differentiating between abstract classes and interfaces and learning when to use each for more flexible and maintainable code.
	Day 2	The final Keyword: Understanding the various uses of final with variables, methods, and classes.
	Day 3	Introduction to Java Collections Framework: An overview of the standardized data structures for storing and manipulating groups of objects.
	Day 4	ArrayList and LinkedList: A detailed look at these two list implementations, their differences, and use cases.
	Day 5	HashSet and HashMap: Exploring the Set and Map interfaces and how to use hash-based implementations for efficient data storage.
	Activities & Deliverables	Build a simple program that manages a to-do list using an ArrayList and a contact list using a HashMap. Deliverable: A .java file that demonstrates adding, removing, and retrieving data from both an ArrayList and a HashMap.
Week 04	Day 1	Understanding Exceptions: What are exceptions and why is it important to handle them? Learning the try-catch-finally block.
	Day 2	Checked vs. Unchecked Exceptions: Differentiating between the two types of exceptions and how they are handled by the compiler.

	Day 3	File I/O Basics: Introduction to reading from and writing to files using Java's I/O streams.
	Day 4	Reading and Writing Files: Practical examples of using FileInputStream, FileOutputStream, BufferedReader, and BufferedWriter.
	Day 5	Midterm Examination
	Activities & Deliverables	Write a program that reads a list of names from a text file, sorts them alphabetically, and writes the sorted list to a new file. Deliverable: Two .txt files (one for input, one for output) and a .java file that successfully performs the read/sort/write operation.
Week 05	Day 1	What is a Thread? Understanding the concept of a thread and how to create one using the Thread class or Runnable interface.
	Day 2	Creating and Managing Threads: Learning how to start, stop, and manage the lifecycle of threads.
	Day 3	Thread Synchronization: Addressing the challenge of multiple threads accessing shared resources simultaneously using synchronized methods and blocks.
	Day 4	volatile and synchronized Keywords: A deeper dive into these keywords for managing visibility and mutual exclusion in concurrent applications.
	Day 5	ExecutorService and Callable: Exploring more advanced concurrency tools for managing thread pools and returning values from a thread's execution.
	Activities & Deliverables	Create a multithreaded application where two threads increment a shared counter, demonstrating the need for synchronization. Deliverable: A .java file that shows a race condition without synchronization and then a corrected version with proper locking.
Week 06	Day 1	Introduction to Databases and SQL: A primer on relational databases and the basics of Structured Query Language (SQL).
	Day 2	JDBC (Java Database Connectivity) Architecture: Understanding the architecture and drivers that allow Java applications to connect to databases.
	Day 3	Connecting to a Database: A step-by-step guide to establishing a connection to a MySQL or PostgreSQL database.
	Day 4	Executing SQL Queries: Learning to use JDBC to perform CRUD (Create, Read, Update, Delete) operations.
	Day 5	PreparedStatement and ResultSet: Using PreparedStatement to prevent SQL injection and processing query results with ResultSet.
	Activities & Deliverables	Develop a simple console application that connects to a database, inserts a new user record, and then retrieves and prints all user records. Deliverable: A .java file that demonstrates successful database connectivity and CRUD operations.
Week 07	Day 1	Introduction to Unit Testing with JUnit: Learning the importance of unit testing and writing your first test cases with JUnit.
	Day 2	Test Setup and Assertions: Using @Before, @After, and assertion methods to create robust and reliable tests.
	Day 3	Software Design Patterns: An introduction to common design patterns like Singleton, Factory, and Observer, and how to apply them to create more robust and scalable applications.
	Day 4	Introduction to Dependency Management: Understanding the concept of external libraries and how to manage them manually or with a simple tool.



	Day 5	Introduction to Git and Version Control: Learning the fundamentals of Git for collaborative development and version management.
	Activities & Deliverables	Write JUnit tests for the Car class created in Week 2, covering methods like startEngine() and accelerate(). Deliverable: A project that includes the Car class code and a test class with at least three passing unit tests, demonstrating proper project structure.
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Project Presentation & Wrap-up
	Activities & Deliverables	Final Project Presentation & Wrap-up



10. DATA SCIENCE



Week	Days	Topics
Week 01	Day 1	Introduction to Data Science: Scope, Applications, and Trends
	Day 2	AI & ML Basics, Roles & Responsibilities of a Data Scientist
	Day 3	Data Science Workflow & Project Lifecycle
	Day 4	Tools & Technologies: Jupyter, Python
	Day 5	Pandas, Scikit-Learn
	Activities & Deliverables	Hands-on: Explore datasets using Python Assignment 1: Report on 3 real-world applications of Data Science Quiz 1: Core concepts of data science
Week 02	Day 1	Setting up Python Environment (Anaconda, Jupyter)
	Day 2	Python Basics: Variables, Data Types, Operators
	Day 3	Control Structures: if-else, loops, and functions
	Day 4	Data Structures: Lists, Tuples, Dictionaries, Sets
	Day 5	NumPy for numerical operations & Pandas basics
	Activities & Deliverables	Lab: Manipulate datasets using Pandas & NumPy Assignment 2: Analyze a CSV dataset Quiz 2: Python syntax & Pandas operations
Week 03	Day 1	Sources of Data: APIs, Web Scraping, Databases, CSV/Excel
	Day 2	Handling Missing Data & Duplicates
	Day 3	Data Cleaning: Outliers, Normalization, Encoding
	Day 4	Feature Engineering & Selection
	Day 5	Scaling & Transformation of Data
	Activities & Deliverables	Lab: Clean and preprocess a dataset Assignment 3: Feature engineering on given data Quiz 3: Data collection & preprocessing concepts
Week 04	Day 1	Understanding Data Types & Distributions
	Day 2	Descriptive Statistics and Summary Functions
	Day 3	Identifying Trends, Patterns & Correlations
	Day 4	Pandas Profiling and Seaborn for Insights
	Day 5	Mid Term Exam
	Activities & Deliverables	Lab: Perform EDA on a dataset Assignment 4: Create an EDA report with charts Quiz 4: EDA techniques & visualization
Week 05	Day 1	Introduction to Machine Learning Concepts
	Day 2	Types of ML: Supervised vs Unsupervised
	Day 3	Building Regression & Classification Models
	Day 4	Model Training, Testing & Validation
	Day 5	Overfitting, Underfitting & Cross-Validation
	Activities & Deliverables	Lab: Train simple regression & classification models Assignment 5: Evaluate model performance Quiz 5: ML basics & model validation
Week 06	Day 1	Importance of Data Visualization in Storytelling
	Day 2	Charts & Graphs with Matplotlib
	Day 3	Visualizations with Seaborn
	Day 4	Interactive Dashboards: Intro to Plotly/Power BI
	Day 5	Visualization Best Practices & Presenting Insights
	Activities & Deliverables	Lab: Build visualizations & dashboards Assignment 6: Create a project insights report Quiz 6: Visualization techniques & dashboarding



Week 07	Day 1	Big Data Concepts
	Day 2	Structured vs Unstructured Data
	Day 3	Intro to Cloud Platforms: AWS, GCP, Azure
	Day 4	Google Colab & Kaggle for Cloud Analysis
	Day 5	Cloud-Based Tools & Real-World Case Studies
	Activities & Deliverables	Lab: Cloud-based analysis using Colab Assignment 7: Compare cloud platforms & big data tools Quiz 7: Big data & cloud integration concepts
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Exam
	Activities & Deliverables	Final Project: Implement MNIST Classification Model using Kaggle Dataset



11. CYBER SECURITY AND ETHICAL HACKING



Week	Days	Topics
Week 01	Day 1	Cyber Security Landscape & Threat Types
	Day 2	Principles of Ethical Hacking & Legal Frameworks
	Day 3	Types of Hackers: White Hat, Black Hat, Grey Hat
	Day 4	Cyber Attack Vectors & Real-World Case Studies
	Day 5	Phases of Ethical Hacking & Intro to Security Tools
	Activities & Deliverables	Lab: Explore attack vectors using Kali Linux Assignment 1: Analyze a real-world cyberattack Quiz 1: Cyber threats & hacker types
Week 02	Day 1	Basics of Computer Networks & OSI Model
	Day 2	IP Addressing, Subnetting & Protocols (TCP/IP, UDP)
	Day 3	DNS, DHCP, and Common Network Services
	Day 4	Network Security Concepts: Firewalls, IDS/IPS, VPNs
	Day 5	Wi-Fi Security & Secure Protocols (HTTPS, SSL/TLS, SSH)
	Activities & Deliverables	Lab: Configure firewall & secure Wi-Fi Assignment 2: Document secure network configurations Quiz 2: Networking fundamentals & security protocols
Week 03	Day 1	Web Application Architecture & Security Principles
	Day 2	OWASP Top 10 Security Vulnerabilities
	Day 3	Cross-Site Scripting (XSS) & CSRF
	Day 4	SQL Injection Variants & Session Hijacking
	Day 5	Hands-on with DVWA / bWAPP
	Activities & Deliverables	Lab: Exploit DVWA for XSS & SQLi Assignment 3: Document OWASP Top 10 mitigations Quiz 3: OWASP vulnerabilities & SQLi concepts
Week 04	Day 1	Types of Malware: Virus, Worms, Trojans, Ransomware
	Day 2	Malware Behavior Analysis Techniques
	Day 3	Static vs Dynamic Malware Analysis Tools
	Day 4	Reverse Engineering Basics (Ghidra, OllyDbg)
	Day 5	Mid Term Exam
	Activities & Deliverables	Lab: Analyze malware in a sandbox Assignment 4: Reverse-engineer a binary Quiz 4: Malware types & analysis techniques
Week 05	Day 1	Basics of Cryptography: Symmetric vs Asymmetric
	Day 2	Encryption Algorithms: AES, RSA, DES
	Day 3	Hashing Functions: MD5, SHA1, SHA256
	Day 4	Digital Signatures, Certificates & Key Exchange
	Day 5	Best Practices for Data Protection (Transit & Rest)
	Activities & Deliverables	Lab: Implement AES & RSA in Python Assignment 5: Compare symmetric & asymmetric encryption Quiz 5: Cryptography & data security concepts
Week 06	Day 1	Penetration Testing Methodologies & Phases
	Day 2	Footprinting, Scanning & Enumeration Techniques
	Day 3	Exploitation & Post-Exploitation Strategies
	Day 4	Social Engineering Attacks & Countermeasures
	Day 5	Tools Overview: Metasploit, Nmap, Nessus, Nikto, OpenVAS
	Activities & Deliverables	Lab: Perform a simulated penetration test Assignment 6: Document pen-test phases Quiz 6: Pen-testing methodologies & tools



Week 07	Day 1	IT Security Policies & Procedures
	Day 2	Conducting Security Audits & Risk Assessments
	Day 3	Compliance Standards: ISO 27001, GDPR, PCI-DSS
	Day 4	Logging, Monitoring & Incident Response Planning
	Day 5	Cybersecurity Career Roadmap & Certifications
	Activities & Deliverables	Lab: Simulate a risk assessment Assignment 7: Prepare a compliance audit report Quiz 7: Security auditing & compliance standards
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Exam
	Activities & Deliverables	Final Project: End-to-end penetration testing simulation



12. CLOUD COMPUTING



Week	Days	Topics
Week 01	Day 1	Overview of Cloud Computing and Its Evolution
	Day 2	Benefits and Challenges of Cloud Adoption
	Day 3	Virtual Machines vs Containers
	Day 4	Introduction to Hypervisors and Virtualization Technologies
	Day 5	Cloud Deployment Models: Public, Private, Hybrid, Community
	Activities & Deliverables	Report: Explore Real-World Use Cases of Cloud Solutions, Public and Private Cloud Solutions
Week 02	Day 1	Understanding IaaS, PaaS, SaaS with Examples
	Day 2	Comparing Traditional IT vs Cloud Models
	Day 3	Use Cases and Selection Criteria for Service Models
	Day 4	Key Vendors and Offerings in Each Model
	Day 5	Service-Level Agreements (SLAs) and Pricing Models
	Activities & Deliverables	Lab: Explore the Service-Level Agreements (SLAs) of AWS and Perform Estimation using AWS Pricing Models
Week 03	Day 1	Introduction to Amazon Web Services (AWS)
	Day 2	Creating and Managing Accounts and Resources
	Day 3	AWS Global Infrastructure, Zone, Region, POP
	Day 4	Common Services: Compute (EC2, VM), Storage (S3, Blob), Networking
	Day 5	Cloud Console Navigation and CLI Basics
	Activities & Deliverables	Lab: AWS Cloud Console Navigation and CLI Basics
Week 04	Day 1	OpenStack Introduction, OpenStack landscape
	Day 2	OpenStack Conceptual Architecture
	Day 3	3-node vs 2-node Architecture of OpenStack
	Day 4	OpenStack case studies
	Day 5	Mid Term Exam
	Activities & Deliverables	Lab: Signup on OpenStack Public Cloud Trial and perform basic Cloud Console Navigation
Week 05	Day 1	Local Dev Environment: Devstack
	Day 2	Devstack installation
	Day 3	OpenStack services, Compute, Storage, Networking
	Day 4	OpenStack Client tools
	Day 5	OpenStack services Identity, Image services
	Activities & Deliverables	Lab: Deployment of Devstack and access its console for different basic operations.
Week 06	Day 1	Types of Cloud Storage: Object, Block
	Day 2	Data Backup, Archiving, and Lifecycle Management
	Day 3	Introduction to Cloud Databases: Trove, RDS
	Day 4	Configuring and Managing Databases in Cloud Platforms
	Day 5	High Availability and Scalability Considerations
	Activities & Deliverables	Lab: Build simple Cloud Storage on OpenStack/AWS
Week 07	Day 1	Understanding Cloud Security Shared Responsibility Model



	Day 2	Identity & Access Management (IAM) Basics, Managing Permissions and Security Groups
	Day 3	Data Encryption at Rest and in Transit
	Day 4	Introduction to Compliance Frameworks: GDPR
	Day 5	Tools for Monitoring and Threat Detection
	Activities & Deliverables	Lab: OpenStack Cloud Monitoring using Telemetry (Ceilometer), Alram Services.
Week 08	Day 1	Explore freelancing basics, top marketplaces like Upwork & Fiver
	Day 2	Effective principles of oral and written communication, Listening skills – listening to the employer and clients, Feedback to the clients, and ethics
	Day 3	Resume Writing- theory and practice, LinkedIn profile- importance, and account creation
	Day 4	Employment interviews- theory, discussion, pair interview simulation, group simulation
	Day 5	Final Exam
	Activities & Deliverables	Final Project: Simple Web Application Deployment on Cloud Platform