EDGE-RUET CSE Digital Skill Training Program
Training Track: Python (Django)
Training Outline & Schedule
Intermediate
Batch No. RUETCSEB0107
Venue: Software (SW) Lab, 1ˢᵗ Floor, Department of CSE, RUET

Module Name	Content	Training Methodology	Duration	Date	Time	Trainer
Module 1: Overview of Python	Introduction to Python, understanding its applications and features, step-by-step Python installation process, checking and verifying the installed Python version, exploring key modules in Python and their installation processes.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	26.05.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 2: Python Basics – Input, Output, and Syntax	Learning Python's input and output mechanisms, understanding Python syntax and code structure, writing comments for clarity, working with variables and Python strings, solving basic problems for hands-on practice.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	28.05.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 3: Python Basics – Conditions and Loops	Implementing conditional statements using if-else, understanding iteration with for and while loops, applying these concepts in real-world scenarios, problem-solving to reinforce learning.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	30.05.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 4: Python Basics – Data Structures	Exploring Python's core data structures: lists, tuples, sets, and dictionaries, understanding their properties, use cases, and operations, solving problems to apply these data structures effectively.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	02.06.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 5: Python Basics – Functions, Modules, and File Handling	Defining and using Python functions for modular programming, exploring Python's built-in modules, working with dates and math functions, understanding Python's file handling capabilities including reading and writing files.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	04.06.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 6: Python Basics – Advanced Modules	Introduction to essential libraries: NumPy, SciPy, Pandas, Scikit-Learn, and Django, creating custom user modules, solving practical problems to understand advanced modules' functionality.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	25.11.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert

Module 7: Python Basics – OOP and Data Structures	Introduction to Object-Oriented Programming (OOP), creating and using classes and objects, applying concepts like inheritance, polymorphism, and encapsulation, solving data structure and algorithm problems.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	27.11.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 8: GUI Programming with Tkinter – Basics	Introduction to Tkinter, its installation process, understanding basic libraries and their usage, creating the first GUI project, working with widgets like labels, canvas, combo boxes, check buttons, radio buttons, and frames.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	30.11.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 9: GUI Programming with Tkinter – Advanced Widgets	Adding and customizing text, buttons, and images, using interactive buttons with commands, working with user inputs, designing frames, resizing windows, and adding icons for professional GUI design.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	02.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 10: GUI Programming with Tkinter – Project Work	Developing a comprehensive GUI project using Tkinter, selected and guided by the trainer, integrating multiple widgets and functionalities for real-world applications.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	04.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 11: Introduction to Web Application Development	Basics of front-end development using HTML, CSS, and JavaScript, understanding web design principles, creating responsive and interactive designs as a foundation for Django development.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	07.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 12: Introduction to Django Framework	Understanding Django's features and architecture, setting up Django's development environment, running a simple "Hello World" application, introduction to Django's MVC and MTV patterns.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	09.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 13: Displaying Hyperlinks – Project	Understanding Django's project and app structure, activating the first app, creating views and mapping them to URLs, using templates to improve views, applying template inheritance, passing data between URLs, views, and templates.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	11.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 14: Mid-Term Examination	Quiz, Practical, Viva-Voce & Project Presentation	Quiz, Practical Exam, Viva	03 Hours	14.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert

Module 15: Creating a Website – Project	Starting a Django project, creating and activating apps, defining models and converting them into database tables, performing basic CRUD operations (create, read, update, delete), and handling database modifications.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	16.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 16: Django Administration Panel	Using and customizing Django's admin interface, adding and managing users, accessing and modifying data through the admin panel, setting user permissions for secure access.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	18.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 17: Building the First Page	Using Django templates to create dynamic web pages, adding background colors, banners, and images, implementing user registration and information upload, customizing the admin interface title.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	28.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 18: Django Forms Creation	Understanding the basics of forms in Django, creating and managing forms, developing a "Contact Us" form, working with different form field types to handle various input requirements.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	30.12.2024	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 19: Using Databases in Django	Configuring and using SQLite, integrating MySQL and Oracle databases with Django, performing database operations, understanding database connections and configurations.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	01.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 20: Project Work – Phase 1	Initial phase of project development using Django and Tkinter, planning and setting up project requirements, integrating initial modules.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	04.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 21: Project Work – Phase 2	Building core functionalities of the project, integrating database operations, implementing basic front-end designs, enhancing user experience.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	06.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 22: Project Work – Phase 3	Adding advanced features to the project, incorporating complex database relationships, integrating custom user modules, and testing for stability.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	08.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 23: Project Work – Phase 4	Optimizing project performance, implementing additional features such as user authentication and file management, enhancing security and efficiency.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	11.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 24: Project Work – Phase 5	Finalizing the project with comprehensive testing, deploying the project for real-world usage, preparing documentation for the project.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	13.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert

Module 25: Advanced Features in Django	Exploring advanced Django features like API integration, caching, error handling, working with RESTful resource controllers, and sending notifications.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	15.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 26: Debugging and Deployment	Understanding common errors in Django, using debugging tools, deploying the project to a live server, and maintaining project updates post-deployment.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	18.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert
Module 27: Final Examination	Quiz, Practical, Viva-Voce & Project Presentation	Quiz, Practical Exam, Viva	03 Hours	20.01.2025	05:00 PM – 08:00 PM	EKH / AYS / Industry Expert

* At least 25% of the classes will be taken by Industry Experts (at least 7 classes).

Assigned Teachers
EKH: Emrana Kabir Hashi
AYS: Md. Azmain Yakin Srizon
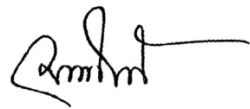
Industry Experts:
Yet to be added

Evaluation Method
Class Attendance: 10%
Quiz and Assignment: 20%
Mid-term Assessment: 20%
Project: 25%
Final Evaluation: 25%

Lab Assistants / Attendants:
Md. Shihan Arefin
Md. Sazzadur Rahman Mithu
Md. Asadul Islam

Thanks in advance,

S. M. Mahedy Hasan
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&
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