AI Lab – Week 1

Course: Artificial Intelligence (BS-CS Semester 3)

Instructor: Azeem Aslam

Duration: 2 Hours

🎯 Objectives

- Set up the programming environment (Python, Jupyter Notebook, VS Code).
- Revise Python basics (variables, loops, functions).
- Write and test first AI-related programs.

Lab Submission & Marking Rules

- Work in file: **AI_Lab1_YourName.ipynb**.
- Tell me when you **save** your file → I will check it **in class**.
- ❌ No email / WhatsApp submission.
- If you don't finish in lab → **you are responsible for your marks**.
- **Final marks depend on lab submissions.**

Marking Breakdown

- Task completion – 50%
- Code quality & comments – 20%
- Demo/explanation – 20%
- Setup ready (VS Code/Jupyter) – 10%

⚠️ Work not done in lab = low/zero marks. Copying = zero.

⚙️ Part 1 – Environment Setup

1. Install **Anaconda** OR ensure Python 3.8+ is installed.
2. Open **Jupyter Notebook** or **VS Code**.
3. Create a new notebook/file named:

```
AI_Lab1_YourName.ipynb
```

4. Run a simple **Hello AI World!** program:

```
print("Hello AI World!")
```

Part 2 – Python Basics (45 min)

Task 1 – Variables & Data Types

```python
# Store student info
name = "Ali"
roll_no = 23
cgpa = 3.4

print("Name:", name)
print("Roll No:", roll_no)
print("CGPA:", cgpa)
```

👉 Modify values for your own info.

Task 2 – Loops

```python
# Print numbers 1 to 10
for i in range(1, 11):
    print(i)
```

👉 Change it to print **even numbers** only.

Task 3 – Functions

Copy code

```python
# Function to calculate factorial
def factorial(n):
    result = 1
    for i in range(1, n+1):
        result *= i
    return result

print("Factorial of 5:", factorial(5))
```

👉 Modify code to ask the user for input.

🧠 Part 3 – Mini AI Concept (30 min)

👉 Let's write a program that **decides if a student passes or fails**:

python Copy code

```python
marks = int(input("Enter marks: "))

if marks >= 50:
    print("Pass ✅")
else:
    print("Fail ❌")
```

👉 Extend it to:

- Grade A (≥80), Grade B (≥60), Grade C (≥50), Fail (<50).

📌 Submission Instructions

- Save your notebook as:

```
AI_Lab1_YourName.ipynb
```

- **When you save your file, please tell me. I will check your work during the lab.**
- ❌ No email or WhatsApp submission.
- ⚠️ **Important:** If you do not complete this work during the lab session, **you will be responsible for your marks**. This lab work will be evaluated and your **final marks depend on lab work submission**.