K.R. MANGALAM UNIVERSITY
THE COMPLETE WORLD OF EDUCATION

	School of Engineering & Technology	
	Department: SOET	**Session: 2025-26**
	Program: BCA (Cyber Security)	**Semester: I**
	Course Code: ETCCCPP103	**Number of students:**
	Course Name: Problem Solving with Python	**Faculty: Neha Kaushik**

Assignment Number: 01

Submission Instructions:

1. **Submission Deadline:** Assignments must be submitted within one week of the assignment's release date.
2. **Submission Platform:** All assignments are to be submitted via the Learning Management System (LMS) or Moodle (https://lms.krmangalam.edu.in/).
3. **GitHub Link:** You must provide a link to your GitHub repository with your submission (Optional).

4. **Individual Submission:** Assignments are to be completed and submitted by each individual student.
5. **Formatting**: All assignments must adhere to the specific format shared in class.

Total Marks 5

Mini Project Assignment: Python Basics & Student Profile CLI

Course: Problem Solving with Python (BCA)

Unit: 1 — Introduction to Python Programming

Assignment Title: Building a Student Profile Console App

Assignment Type: Individual

Estimated Duration: 6-8 hours

Weightage: 15% of course grade

Real-World Problem Context

Students frequently need to present their personal and academic information for academic platforms, clubs, coding profiles, hackathons, and resumes.

This project will help students create a **Python-based Command Line Interface (CLI)** tool that collects student details, performs basic operations, and prints a formatted profile card — applying **Python basics from Unit-1**.

Learning Objectives

By completing this assignment, learners will:

- Understand Python history & features
- Set up Python development environment (VS Code / Anaconda / PyCharm / IDLE)
- Use Python syntax and variables
- Work with data types & type conversion
- Practice arithmetic, comparison, logical, assignment, identity & membership operators
- Apply string operations, formatting, escape characters, and string methods
- Write a console program using input() and formatted output

Assignment Tasks

Task 1: Setup & Introduction

- Install Python & any IDE (VS Code recommended)
- Verify installation using:
- python --version
- Create folder: bca_python_assignment1
- Inside it, create student_profile.py
- Add comment header:

  # Name:

  # Roll No:

  # Course: BCA

  # Semester: 1st

  # Subject: Problem Solving with Python

  # Assignment: Unit-1 Mini Project

  # Title: Student Profile Console App

  # Date:
- Print a welcome message describing the tool

Deliverable: Program file with screenshots of Python & IDE installation verification

Task 2: Input & Variables

Use input() and store:

- Student Full Name
- Roll Number
- Program (e.g., BCA)
- University Name
- City
- Age
- Hobby

Use proper variable names and type conversions (int(), str())

Deliverable: Working input system

Task 3: Operators Demonstration

Ask the user to enter **two numbers**.

Demonstrate:

- Arithmetic operators (+, -, *, /, %, **, //)
- Assignment operators (+=, -=, etc.)
- Comparison operators
- Logical operators (and, or, not)
- Identity operators (is, is not)
- Membership operators (in, not in)

Deliverable: Operator demonstration output

Task 4: Python Strings & Formatting

Apply:

- String concatenation
- f-strings
- Escape characters \t \n \" \"
- At least 5 string methods (upper, lower, title, strip, replace, count, etc.)

Task 5: Final Output — Student Profile Card

Print formatted output like:

```
----------------------------------------
      STUDENT PROFILE SYSTEM
----------------------------------------
Name:         John Sharma
Roll No:      23BCA101
Course:       BCA
University:   K.R. Mangalam University
City:         Patiala
Age:          18
Hobby:        Coding
----------------------------------------
Welcome to Python Programming !
```

Task 6: Bonus Task (Extra Credit)

Ask user:

Do you want to save your profile? (yes/no):

If yes, write profile to: student_profile.txt using open()

Submission Instructions

Submit:

- student_profile.py
- Screenshots of program execution (minimum 3)
- Python installation screenshot
- Text log file (if bonus done)
- GitHub repo link

Evaluation Rubric

Criteria	Weight	Excellent (5)	Good (4)	Fair (3)	Poor (2)
Python Setup & Files	10%	Proper setup w/ screenshots	Installed	Partial	Not done
Python Basics &	20%	Clear & correct	Mostly	Limited	Wrong

Variables			correct		
Operators Implementation	20%	All operators	Mostly correct	Partial	Missing
String Operations	20%	Clean formatting, 5+ methods	Good	Basic	Poor
Code Output & Formatting	20%	Neat, well formatted	Good	Basic	Poor
Documentation & Comments	10%	Well commented	Some	Few	None

Academic Integrity

- Work must be original
- Copied work = Zero marks + disciplinary action