



# University of Central Punjab

(Incorporated by Ordinance No. XXIV of 2002 promulgated by Government of the Punjab)  
FACULTY OF INFORMATION TECHNOLOGY

## Introduction to Data Science

### Assignment 2

**Total Marks: 20**

#### **Note:**

- 1. The Assignment is related to NumPy.**
- 2. Minimize the use of loops. Use built-in function and comprehensions to answer all the questions**
- 3. NO LATE SUBMISSION**

#### **Task 1: Students Grade Summary**

Write a Python program that calculates some statistics about grades in a particular course with NumPy.

You are given a file named “**students.txt**” which contains grades of six assignments and their submission time for different students. Import the file and perform the following analysis on it.

1. Find the mean value of assignment 1. Return this as a scalar value rounded to 2 decimal places. **(3)**
2. Find the top student in the assignment 2. Return the marks rounded to 2 decimal places with student ID. **(3)**
3. Find the Students ID who got 90 or above marks in assignment 1, assignment 3 and assignment 6. Return the students ID as a NumPy 1D array. **(3)**
4. Find the number of students who got 80 or below marks in assignment 4, and 90 or above marks in assignment 5. Return a scalar number. **(3)**
5. Find the top student overall. Return his ID and marks rounded to 2 decimal places as NumPy 1D array. **(3)**
6. Each assignment has the equal weightage which is 2. Find the weighted average of each student's assignments grade rounded to 1 decimal place. Return a 2D array with each student's ID and average grade. **(5)**