# IC150P Computation for Engineers Lab

Odd Semester, 2017

Assignment sheet no. 05, Batch – Wednesday Topic: Pointers

**OBJECTIVES:**

- To understand the concepts of memory addresses, pointers to the arrays and strings.
- To get started with the use of pointers and application of pointers in calling a function by reference.

**ASSIGNMENT PROBLEMS:**

**Task-1:** An array with N elements and an index of specific number are provided. Now subtract the number denoted by element at a specific index from each element of the array. Print both new and old arrays.
Given input array =”1 5 9 8 7 8 9” and index as 2
So the program should return “1 5 9 8 7 8 9 “and “8 4 0 1 2 1 0 “.

**Task-2:** Let a class of N number of students have credited three subjects namely S1, S2 and S3. The marks obtained by each student in each of the subject will be provided. Calculate the mean and variance of each subject individually and award the grades (O, A and B). Write a function that takes student details as input through a 2-D matrix and returns their grades.

**Task-3:** Define a function that scans a string from beginning to end in search of all the vowels present in it.
If a vowel is found
(a) It should return a pointer to the occurrences of the vowels in the string
(b) It should also return the number of vowels.
If no vowel is found in the string, the function should return a NULL and the string should be printed as it is.

**NOTE:**

- Each task carries 2 marks
- You are required to bring pseudo codes (and not full programs) for each of the tasks written in a notebook to the lab session and present them to the Instructors/TAs for evaluation
- The codes need to be created from scratch while you are in lab
- For string operations you should not use any Built-in c string function.

**REMEMBER:**

- To use spaces and indentation to improve the readability of your code
- To add a comment block at the top of your code file stating your name, roll no., assignment and task no.
- To provide comments at appropriate places to aid lucid comprehension of modules