Course Code	
Course Name	C Programming

1. Write a program which accepts a character ch from the user and determines if the entered character is a capital letter, a small case letter, a digit or a special symbol. 15 minutes

2. Write a program which accepts two integers x and y and determines x to the power y. 15 minutes

3. Write a menu driven program which accepts an integer x and provides the following options:

45 minutes

- Determine the factorial of x
- Determine if x is a prime number
- Determine if x is odd or even

4. Write a program to determine the sum of digits of a 5 digit positive integer x accepted from the user.

15 minutes

5. Write macros with arguments for calculation of area and perimeter of a triangle, a square and a circle. Write these macros in a file called “shapes.h”. Include this file in your file “main.c” which will call the macro definition for calculation of area and perimeter of the shapes mentioned above.

30 minutes

6. Write a program which accepts a string s from the user and determines it length and also determines if it is a palindrome. Use pointer notation to access the elements of the string. 15 minutes

7. Write a program which accepts a string s from the user and reverses it. Use pointer notation to access the elements of the string. 15 minutes

8. Write a function TrimSpaces() which accepts a string s from the user and removes all the spaces from the string. Use pointer notation to access the elements of the string. 15 minutes

9. Write a function SearchChar() which accepts a string s and a character c. The function should search for the occurrence of character c in the string s. If the character is found then it should return a pointer to the first occurrence of the given character otherwise it should return a NULL. Use pointer notation to access the elements of the string. 30 minutes

10. Write a function SearchString() which accepts two string s1 and s2. The function should search for the occurrence of string s2 in the string s1. If the string s2 is found in string s1 then it should return a pointer to the first occurrence of the s2 otherwise it should return a NULL. Use pointer notation to access the elements of the string. 30 minutes

11. Write a function myputs() which works like the standard library function puts(). puts() accepts a string argument and displays the string with a newline character on the console. 15 minutes

12. What is wrong with the code snippet below? 15 minutes

```
int *p , i;
p=&i;
p = p * 4;
```

13. Write a program which declares a function pointer pF, which can point to a function accepting two integers and returning an integer. Write a function F() which accepts two integers and returns an integer. Initialize pF with the address of F() and call function F() using pointer pF. 15 minutes

14. Write a program which declares an array of function pointers. The function pointers should be such that they can point to a function accepting two integers and returning an integer. Write four functions which accept two integers and return an integer. Initialize the array with the address of these four functions and call the functions using the function pointers in the array. 30 minutes

15. Write a program which removes all the comments from a C Program. The name & path of the input & output files will be passed via command line. 30 minutes

17. Write a program that will count the number of words in a given text file. 60 minutes

18. Write a program to find a particular string in a file and replace it with another string. The program should be a menu driven program and it should have the following options. 60 minutes

- Case Sensitive Search
- Find Next
- Replace
- Replace All