MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent college of Manipal University, Manipal)
Manipal Karnataka 576 104

DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY

COURSE PLAN

Department	**: Information and Communication Technology**
Subject	**: Linux OS Lab (ICT 315)**
Semester & branch	**: 5th Semester, B.Tech (I.T.)**
Name of the faculty	**: Ms. Girija Attigeri, Ms. Veena K.M., Mr. Rajesh K., Ms. Anusha Hegde**

Submitted by:

Ms. Girija Attigeri,

Ms. Veena K.M.,

Mr. Rajesh K.,

Ms. Anusha Hegde

(Signature of the faculty)
Date: 3/8/2015

Approved by: Dr. Preetham Kumar

(Signature of HOD)
Date: 4.8.15

Mode Of Evaluation

Continuous Evaluation: 60 marks

End Semester Exam: 40 marks

The evaluations will be conducted in the lab sessions: 3, 5, 7, 9, 11 and 12. Each lab evaluation carries 10 marks (4 marks for record, 4 marks for viva and 2 marks for the execution*)

*All the programs should be executed as per the instruction given in the lab. Programs should not be copied from internet or any other sources. Each student have to execute the programs individually. Instructor can decide execution marks based on the programs executed by the individual students and its authenticity.

Lab Session	Laboratory Assignment to be discussed
1.	Work with the following shell commands (i) File and directory related (ls, touch, cat, file, pwd, cd, cp, mv, rm, mkdir, rmdir, wc) (ii) Process and state related (ps, kill, bg,fg) (iii)Editor(vi) (iv) File permissions (chmod, sudo)
2.	Work with the following shell commands (i) Pipes and filters(|, >, >>, grep,find,sort) (ii) Other useful commands(cal, date, echo, bc, cut, tail, read, man, clear)
3.	(i) Write a shell script that accepts file name from the user that displays all attributes of the file. (ii) Write a shell script to calculate the gross salary. GS= Basics+ TA +10% of Basic. Floating point calculations has to be performed. (iii) Make a duplicate copy of a specified file through command line. (iv) Write a shell script to input a file and display permissions of the owner group and others. (v) Write a shell script that converts seconds to time format HH:MM::SS. (vi) Write a shell script to generate fibonacci series.
4.	(i) Write a program to reverse a number which is passed as a command line argument. (ii) Write a shell script to print the multiplication tables for a given number. (iii) Write a shell script to check whether an input number is prime or not. (iv) Write a shell script to find out the greatest and smallest among N integer inputs where N is to be input by the user. (v) Implement wordcount script that takes -linecount, -wordcount, - charcount options and performs accordingly on the input file all of which are command line arguments (use case statement)
5.	Develop a menu driven program to simulate the following process scheduling algorithms: FCFS, RR and Priority.

6.	(i)Write a C program to create a child process. Display different messages in parent process and child process. Display PID and PPID of both parent and child process. (ii)Write a C program to create a child process. Parent should display a message, only after displaying the date in the child process (iii) Write a C program to accept a set of strings as command line arguments. Sort the strings and display them in a child process. Parent process should display the unsorted strings only after the child displays the sorted list.
7.	Write a program to solve producer consumer problem using threads in C.
8.	Write a program to solve reader writer program using semaphores.
9.	Develop a program to simulate banker's algorithm.
10.	Write a 'C' program to implement dynamic storage allocation strategy for first fit and best fit using dynamic allocations for all the required data structures.
11.	Write a C program to simulate page replacement algorithms: FIFO and optimal. Frame allocation has to be done as per user input and use dynamic allocation for all data structures.
12.	Develop a menu driven program to simulate the following disk scheduling algorithms: FCFS, SSTF, SCAN and C-LOOK using dynamic allocation(C pointers).