NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF COMPUTER SCIENCEAND ENGINEERING

COURSE PLAN – PART I			
Name of the programme and specialization	M.Tech Computer Science and Engineering		
Course Title	Advanced Programming Laboratory		
Course Code	CS607	No. of Credits	2
Course Code of Pre-requisite subject(s)	OOPS and OS		
Session	July 2019	Section (if, applicable)	-
Name of Faculty	Dr.C.Mala	Department	CSE
Official Email	mala@nitt.edu	Telephone No.	0431-2503208
Name of Course Coordinator(s) (if, applicable)	Dr.C.Mala		
Official E-mail	mala@nitt.edu	Telephone No.	0431-2503208
Course Type (please tick appropriately)	Laboratory Course		

Syllabus (approved in Senate)
Exercises
1. Exercises using Linux tools – Grep, awk, tr
2. Exercises using system calls
3. Exercises in Python
4. Exercises in C++/ Java
Text Books
1. Arnold Robbins, Nelson H. F. Beebe, Classic Shell Scripting, O'Reilly Media 2005
2. H. Schildt Java: The Complete Reference, Eighth Edition, McGraw-Hill Education (India) Pvt. Limited, 2011.
3. H. Schildt C++: The Complete Reference, Fourth Edition, McGraw-Hill Education (India) Pvt Limited, 2003.
4. Mark Lutz Learning Python, 3rd Edition, O'Reilly Media, 2007

COURSE OBJECTIVES

- To explore the features of object-oriented programming.
- To focus programming rather on programming language.
- To understand the OS internals.

MAPPING OF COs with POs

Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
- develop shell scripts for various applications.	1,2,3,4,5,6
- Gain knowledge about OS internals.	1,2,3,4,5,6
- Understand Object oriented concepts and developing software modules.	3,,5,6,7,8

COURSE PLAN – PART II

COURSE OVERVIEW

The objective of the course is to teach students advanced problem solving through programming. It aims to train students in realizing computer algorithms with efficient Linux, Python,C++/Java programs.

COURSE TEACHING AND LEARNING ACTIVITIES

Sl. No.	Week/Contact Hours	Topic	Mode of Delivery
1	2 Weeks	Exercises on shell programming, awk scripts and system programming using system calls.	Problem Solving / Demo and Hands-On Practice
2	1 Week	Depict the usage of friend, inline and constructor, destructor functions in C++.	Problem Solving / Demo and Hands-On Practice
3	1 Week	Demonstrate the concept of Multiple Inheritance in C++.	Problem Solving / Demo and Hands-On Practice
4	1 Week	Write a C++ program to implement the following Polymorphism concepts in C++: (i) Operator Overloading (ii) Function Overriding	Problem Solving / Demo and Hands-On Practice
5	1 Week	Develop a program to demonstrate C++ Standard Template Library (STL).	Problem Solving / Demo and Hands-On Practice

6	1 Week	Develop a C++ program on template function and template classes.	Problem Solving / Demo and Hands-On Practice
7	1 Week	Develop a C++ Program to implement Pattern Searching algorithms.	Problem Solving / Demo and Hands-On Practice
8	1 Week	Design a C++ application that demonstrates the Inter Process Communication (IPC)	Problem Solving / Demo and Hands-On Practice
9	1 Week	Develop a C++ program to demonstrate the various process scheduling algorithms.	Problem Solving / Demo and Hands-On Practice
10	1 Week	Write a program in Python to Demonstrate the usage of Regular Expression for text pre-processing tasks.	Problem Solving / Demo and Hands-On Practice
11	1 Week	Demonstrate the concept of Linear Regression for a simple prediction scenario in Python using at least 2 features.	Problem Solving / Demo and Hands-On Practice
12	1 Week	Develop a Python program to find the SHA-1 message digest of a file.	Problem Solving / Demo and Hands-On Practice

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Regular Lab Class Assessments	Regular Lab class		50
2	Model Exam		2 hrs	20
CPA	Compensation Assessment		2 hrs	20
3	Semester Lab Exam		3 hrs	30

*mandatory; refer to guidelines on page 4

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

Feedbacks are collected before final examination through MIS or any other standard format followed by the institute.

COURSE POLICY (includingcompensation assessment to be specified)

One compensation assessment will be conducted for absentees in Model exam

MODE OF CORRESPONDENCE (email/ phone etc)

Email : mala@nitt.edu

ATTENDANCE POLICY(A uniform attendance policy as specified below shall be followed)

➢ At least 75% attendance in each course is mandatory.

➢ A maximum of 10% shall be allowed under On Duty (OD) category.

➢ Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

➢ Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.

➢ Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.

➢ The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

➢ The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY

FOR APPROVAL

Course Faculty _____   CC-Chairperson _____ HOD _____