Certificate Programme – LaTeX for Mathematics

Code: M9XX
Year/Semester: II / III   **Credits: 2***   **Hours: 30/Sem**

Objective: To train students in the preparation of projects and dissertations using LaTex.

Unit – I: Basic Document and Bibliography
What is LATEX – Simple typesetting – Fonts Type size – Document class – page style – page numbering – Formatting lengths – parts of a document – Dividing the document – what next? – Introduction – natbib – The BIBTEX program – BIBTEX Style files – Creating a bibliographic database.
(Chapters 1 - 4)

Unit - II: Contents, Index, Glossary, Text, Row and Column
Table of contents – Index – Glossary. Borrowed words – Poetry in typing – Making lists – When order matters – Description and definitions.
(Chapters 5 - 7)

Unit – III: Typesetting Equations and Theorems
Keeping tabs – Tables – The basics – Custom commands – More on mathematics – mathematics miscellany – New operations– The many fact of mathematics – Symbols – Theory in LATEX – Designer theorem-the amsthm package – Housekeeping.
(Chapters 8 - 9)

Unit - IV: Several Kinds of boxes and Floats
LR boxes – Paragraph boxes – Paragraph boxes with specific height – Nested boxes – Role boxes – The figure environment – The table environment.
(Chapters 10 - 11)

Unit – V: Cross References in LATEX, Footnotes, Margin pars and Endnotes
Why cross reference? – Let LATEX do it – Pointing to a page-the package varioref – Pointing outside-the package xr – Lost the keys? Use lables.tex – Footnotes – Marginal notes – Endnotes.
(Chapters 12 - 13)

Book for Study

1. A Primer, *Latex Tutorials*, Indian TEX users group, Trivandrum, India.www.tug.org.in

Books for Reference

1. Peter Flynn, *A beginner's introduction to typesetting with LATEX*, Silmaril Consultants, Textual Therapy Division, 2003.
2. George Gratzer, *More Math into LATEX*, 4th Edition, Springer Science, 2007.
3. Frank Mittelbach, Michel Goossens, *The LaTex Companion*, Second Edition, Addison-Wesley, 2004.
4. Apostolos Syropoulos, Antonis Tsolomitis, Nick Sofroniou, *Digital Typography using Latex*, With 68 Illustrations, Springer-Verlag, 2003.

5. Dr Helmut Kopka, Dr Patrick Daly, *A Guide to Latex: Document preparation for beginners and advanced users*, Addison Wesley; 3rd edition (4 January 1999)

Course Learning Outcomes

This course will enable the students to:
- ➢ prepare documents with paragraphs and sections
- ➢ insert mathematical expressions and numbered equations
- ➢ format theorems, tables and figures
- ➢ organize chapters in the preparation of projects
- ➢ prepare and publish research articles.

.

E Learning Resources: https://www.latex-tutorial.com/tutorials/
https://www.tug.org/twg/mactex/tutorials/ltxprimer-1.0.pdf
https://www.latex-tutorial.com
http://www.tug.org.in/tutorials.html
https://miktex.org/
http://www.docs.is.ed.ac.uk/skills/documents/3722/3722-2014.pdf

<u>**Certificate Course - R Language for Statistics**</u>

Year/Semester: I / II   **Credits: 2***   **Hours: 30/Sem**

Objective: To introduce to the students the novel applications of R language and to give them a hands on experience of working with data.

Unit – I: **Basic Concepts in R**

Assignment of values, Character, Vector arithmetic, Understanding Data types, importing/exporting data - Computation of tables and graphical representation in R: plot, pie chart, box plot, generating graphs from imported data

Unit – II: **Probability Distributions**

Fitting and plotting of binomial, Poisson and Normal distributions

Unit – III: Correlation and Regression

Correlation and linear regression: Representation of bivariate data through scatter diagram, Karl Pearson's, Spearman's and Kendall's coefficients of correlation, Coefficient of determination, linear regression model, Multiple Linear Regression.

Unit – IV: **Tests of Hypothesis**

Student's t - test, One sample Z – test, Paired data t – test

Unit – V: Chi-square test and Design of Experiments

Chi-square test: Independence of attributes and goodness of fit – Design of Experiments: Completely randomized design (CRD), Randomized block design (RBD) and Latin square design (LSD).

Books for Reference

1. Joseph Adler, *R in a Nutshell A Desktop Quick Reference,* O'reilly, 2010.

2. Mark Gardener, *Beginning R the Statistical Programming Language*, John Wiley & Sons, Inc. 2012.

Learning outcomes

Students can able
*   To know about probability distribution function and different types of distributive functions.
*   To know and understand about Tests of Hypothesis
    .
E – Learning source: https://www.r-project.org/
                    https://www.r-statistics.com/
                    http://www.r-tutor.com/elementary-statistics

Python Web Development Syllabus

Base Python:

Informal Introduction to Python

Language Constructs of Python

String Handling Management

Programming Python:

Python Native Datatypes

FCS in DMS & LPS

Functional Programming Methodologies

Intermediate Python:

OOP Paradigm in Python

Exception Handling Mechanism

Modular Python:

Modules of Python Site Package

Advanced Python:

Form Validation Using Regular Expression

Multi Threading Programming

Analytical Python:

File Handling i/o Management

LARAVEL FRAMEWORK SYLLABUS

Laravel Framework

Overview

Features

Installation of Laravel

Server Requirements

Dependency Management

Editor Setup

Controllers

Basic Controllers

Controller Middleware

Restful Resource Controllers

Controller Routing

Forms & Request

Retrieving Input

CSRF Protection

Get Post Method

Validation

Views

Understanding Views

Passing Data to Views

Sharing Data with all Views

Blade Templates

Extends layout

Session & Cookie

Accessing Data

Storing Data

Deleting Data

Database

Connecting to Database

Migration

Model

Facades

Schema Build

Relationship

Tinker

Authentication

Auth Setup

Email Verification

Password Reset

Department of Business Administration

Sacred Heart College (Autonomous)

Certificate Course Syllabus

Semester - III

Certificate in NGO Management

Unit – I – Concepts and Functions of NGO

Introduction – What is an NGO? – Define NGO – Does the Government Recognize NGOs? – Kinds of NGO's Functioning in India – Working of NGOs – NGO Environment – Issues in NGO Management - Aid to Development – Poverty and Development – Poverty and Exploitation – Poverty and Powerlessness – Development Indicators .

Unit – II Problem Identification

Introduction – Problem Identification – Problems of NGOs – Strengthening Voluntary Efforts – Managing People – Governance – Governance and Management – Need for Good Governance for NGOs – Ethical Challenges – Leadership – Need for Leadership with values .

Unit – III Strategy and Planning

Elements of Strategy – Introduction – Understanding your organization – Organization Development- Strategy and Planning – Strategy in the Management World – Elements of a Strategic Plan – Core Values – Strategic Goals.

Unit – IV: SWOT Analysis

Introduction – SWOT analysis – Meaning of Strengths and Weakness – Alternative Formats to Analyze Strengths and Weaknesses – Matching Strength and Weaknesses– The concept of Synergy.

Unit - V: Process of Management & Reporting

Planning – Organizing – Staffing – Directing – Controlling – Coordinating - Introduction to Communications– General Guidelines in Preparing Reports – Procedure of Reporting – Stages in Reporting – Long Reports – Short Reports.

Reference Books

1. Abell, Derek F and John S. Hammond: Strategic Market Planning: Problems and Analytical Approaches, Prentice Hall, Eliglewood Cliffs: New Jersey
2. Peter Drucker: Tasks, Responsibilities, Practice, New York: Harper & Row
3. Ansoff, H Igor: Business Strategy, Penguin Books Limited, Harmondsworth
4. Porter, Michael E: Competitive Strategy: Techniques for Analyzing Industries and Competitors, The Free Press, A Division of Macmillan publishing Co

----

Semester - IV

Certificate in Tourism Management

Unit - I
Definition of tourism and the need for tourism.The birth, growth and development of tourism - factors influencing growth of tourism - tourism in India and abroad.

Unit - II
Tourism - planning -need for planning - government's role in planning - tourism under five   year plans. Tourism marketing -concepts and importance - marketing functions in tourism - tourist marketing mix.

Unit-III
Tourism and culture - tourism and people: tourism and economic development - tourism and growth of related industry, tourism and employment.

Unit - IV
Tourism pricing - methods of pricing - tourism promotion - advertising costs - steps in planning an advertising campaign -tourist publicity.

Unit-V
Tourism and government administrative systems - ministry of tourism - department of tourism -Indian tourism development corporation -world tourism organization -travel agents in India.

Reference Books
1. Tourism and hotel industry in India -Anand M.M.
2. Perspectives of Indian Tourism in India - Clib SN.
3. Successful tourism management - Pran Nath Seth.
4. The management of tourism - Bukart A J.
5. The social implications of tourism development - Butler R W

Certificate Course : JAVA (JSP with MVC)

Total Hours: 30   **Date : 12.08.2018**

Course Content

➢ Manage application state with Sessions to track unique user actions
➢ Leverage Cookies to personalize a web site for a specific user
➢ Integrate the JSP Standard Tag Library (JSTL) to minimize scriptlet code
➢ Build a Multi-Lingual app using Internationalization and JSTL
➢ Build an MVC application with JSP and Servlets
➢ Generate HTML Tables with JSP and Servlets
➢ Add database support with JDBC: query, insert, update and delete
➢ Build a complete database web app with JDBC

PG AND RESEARCH DEPARTMENT OF COMPUTER APPLICATIONS
SACRED HEART COLLEGE(AUTONOMUS), TIRUPATTUR, TIRUPATTUR-635601
ACADEMIC YEAR : 2020 - 2021

Certificate Course : .NET

Total Hours: 30   **Date : 15.03.2019**   **Time: 02.30 – 04.30**

PROGRAMME SCHEDULE

S. No	Date	Content
1	17.03.2019	Introduction to .Net Framework
2	18.03.2019	ASP.Net page life cycle
3	21.03.2019	Server Controls
4	22.03.2019	Introduction to MVC
5	23.03.2019	MVC Projects
6	24.03.2019	MVC Projects
7	25.03.2019	Filters, Controller Extensibility and Helper Methods
8	28.03.2019	Web API and Single-page Applications
9	29.03.2019	MVC Application using MYSQL Sever
10	30.03.2019	MVC Application using MYSQL Sever
11	31.03.2019	MVC Application using MYSQL Sever

PG AND RESEARCH DEPARTMENT OF COMPUTER APPLICATIONS
SACRED HEART COLLEGE(AUTONOMUS), TIRUPATTUR, TIRUPATTUR-635601
ACADEMIC YEAR : 2018 - 2019

MCA347S - SOFT SKILLS

Content	Topics	Hours
Introductory Module	Being someone and knowing someone Setting expectations Non-verbal Communication Move like a Machine	6 Hours
Understand self	Brief account of life My life roles rainbow Who am I Communication skills SWOT Conflict resolution Decision making Time management	10 Hours
Understand career	Life after college/ITI Career and me Understanding career Interests & Abilities Multiple Intelligence	6 Hours
Preparing for work	Workplace expectation (Digital lesson) Resume & Interview (Digital lesson) LinkedIn Week (Digital lesson) My Image (Digital lesson) Preparing for interview (Digital lesson) Mock Interview	8 Hours
TOTAL HOURS		**30 HRS**

Total Hours: 30   **Date : 20.07.2018**

S. No	Day Order	Time
1	II	01.30 PM - 03.30 PM

OBJECTIVES

- To obtain aptitude skills and to solve quantitative problems.

UNIT 1: Averages – Problems on numbers – Problems on ages – Percentage.

UNIT 2: Profit and loss – Ratio and proportion –Time and work – Pipes and cisterns.

UNIT 3: Partnership – Time and distance – Problems on trains.

UNIT 4: Boats and str eams – Simple interest – Compound interest.

UNIT 5: Calendar – Clocks – Permutations and Combinations – Probability.

PG AND RESEARCH DEPARTMENT OF COMPUTER APPLICATIONS

SACRED HEART COLLEGE(AUTONOMUS), TIRUPATTUR, TIRUPATTUR-635601

ACADEMIC YEAR : 2018 - 2019   **MCA447S - TECHNICAL APTITUDE**

Total Hours: 30   **Date : 20.02.2019**

S. No	Day Order	Time
1	**II**	**01.30 PM - 03.30 PM**

- C
- C++
- Java
- DBMS
- Data Structures
- .NET MVC Framework
- Software Quality Assurance
- Software Testing
- Computer Network
- Linux
- PHP
- Python