MAR GREGORIOS COLLEGE OF ARTS & SCIENCE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION SCIENCE

CURRICULUM FOR ADD-ON COURSE

ELECTRONIC WASTE MANAGEMENT SYSTEM- SYLLABUS

ACADEMIC YEAR 2020 - 2021

OBJECTIVES:
- ☐ The major objective of e-waste management is to reduce, reuse and recycle.
- ☐ To enable the recovery and or reuse of useful material from e-waste.
- ☐ To provide hygienic, efficient and economic solid waste storage, collection, disposal of waste without polluting the atmosphere, soil or water system.

OUTCOMES:
- ☐ Learn basic concepts of solid waste management, beginning from source generation to waste disposal in a system.
- ☐ Helps to reduce different forms of pollution.

COURSE DURATION: 40 hrs

Unit I   10 hrs
Electronic Waste Management in India Overview

E-Waste recyclers in India -Digital India -Initiative Corporate Management Plans- Electronic Waste Management -Global Issues including Exports to Poor Countries -Environmental and Public Health Issues of Electronic Waste Management.

Unit II   10 hrs
Exposure pathway of pollutantsemitted from Recycling of E-Waste

Quantification of Pollutants in Dust, Air and Water -Risk Assessment (According to USEPA method) of Recycling of E-Waste -Recovery of Valuable Rare-Earth metals from E-Waste.

Unit III   10 hrs
E-Waste Management Rules of India (2011 and 2016 Rules)

E-waste Regulations from around- The World(European, North America etc.) WEEE rules, EPR concepts, Compare and Contrast with Indian E-waste rules.

Unit IV   10 hrs
E +waste Management: Case Studies and Unique Initiatives from around the

World

Concept of Life Cycle- Analysis and Sustainable Engineering especially from an Electrical and Electronics industry Perspectives -Socio-Economic Life Cycle Analysis (SLCA) of E-Waste Management in Developing countries.

TEXT BOOKS:
1. Future of E-Waste Management – Challenges and Opportunities, Edited by Dr.Navtika Singh Nautiyal and Shuchita Agarwal.
2. Future of E-Waste Management – Challenges and Opportunities in India, Varsha Bhogat and Ganguly.
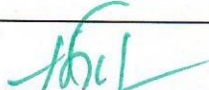
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Class Schedule:

Date	Day	Timings	Venue/ Online	No of Training sessions	Tutorials *	Total Hours
		1.00 to 4.00 pm	On line	0	3	3
		1.00 to 4.00 pm	On line	0	3	6
		1.00 to 4.00 pm	On line	0	3	9
		1.00 to 4.00 pm	On line	0	3	12
		1.00 to 4.00 pm	On line	0	3	15
		1.00 to 4.00 pm	On line	0	3	18
		1.00 to 4.00 pm	On line	0	3	21
		1.00 to 4.00 pm	On line	0	3	24
		1.00 to 4.00 pm	On line	0	3	27
		1.00 to 4.00 pm	On line	0	3	30
		1.00 to 4.00 pm		0	3	33
		1.00 to 4.00 pm		0	3	36
		1.00 to 4.00 pm		0	3	39
		1.00 to 2.00 pm		0	1	40
		1.00 to 4.00 pm		Evaluation		

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION SCIENCE

ELECTRONIC WASTE MANAGEMENT SYSTEM

ACADEMIC YEAR 2020 - 2021

QUESTION PATTERN

Max. Marks: 50   Theory Part 50 marks

Theory Part   Max. Marks: 50   Duration: 1 hr

Objective type Question (50 *1 = 50 marks)

- Ten questions from each unit will be given for exam.
- Each question consists of multiple choice answers.
- Time duration of 60 Minutes will be given.

Staff Signature

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Principal   **Principal**
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DEPARTMENT OF COMPUTER APPLICATIONS
CURRICULUM FOR ADD-ON PROGRAM

ACADEMIC YEAR 2021 - 2022

MODERN TECHNIQUES IN DATA SCIENCE- AN INTRODUCTION

OBJECTIVES:
- ☐ This course introduces the concepts of Data Mining, Artificial Intelligence, Machine Learning, Natural Language Processing and Sentiment Mining.
- ☐ To construct the means for extracting business-focused insights from data.

OUTCOMES:
- ☐ To use knowledge of data mining concepts and Machine Learning in Data Science Analytics
- ☐ Students will demonstrate skill in data management.
- ☐ To demonstrate proficiency with statistical analysis of data.

COURSE DURATION: 30 hrs

SYLLABUS

Unit I   **6 hrs**
Data Science, What is Data Science? What is the need for Data Science?, Implementation Model for Data science, Tools used for Data Science, Advantages and Disadvantages of Data Science.

Unit II   **6 hrs**
Artificial Intelligence- Definition, Types Of Artificial Intelligence, Examples of Artificial Intelligence, Future of Artificial intelligence.

Unit III   **6 hrs**
Data Mining: Definition, Purpose of Data Mining, Phases of Data Mining, Applications of Data Mining, Real life example of Data Mining – Market Basket Analysis, Tasks and Functionalities of Data Mining.

Unit IV   **6 hrs**
Machine Learning : Definition, Features of Machine Learning, Why Machine Learning?, How does Machine Learning Work?, Top 10 Programming Languages For Machine Learning, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Advantages and Disadvantages.

Unit V   **6 hrs**
Natural Language Processing(NLP) : Definition, How Does It Works?, Types Of Natural Language Processing, Milestones In NLP, Model For NLP, Phases In NLP, Applications-Use Cases of NLP, Sentiment Analysis, Examples Of Sentiment Analysis.

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TEXT BOOKS:

1. Data Mining: Concepts and Techniques, Jiawei Han, Jian Pei and Micheline Kamber, 3rd Edition, The Morgan Kaufmann Series.
2. Basics of Artificial Intelligence & Machine Learning, Dr.Dheeraj J Mehrotra.
3. Data Science and Machine Learning, Dr.N.Meenakshi, Dr. Kavitha Esther Rajakumari, and Dr. S. Hariharasitaraman, Notion Press, ISBN:9781638069911.

WEB REFERENCE:

➢ https://towardsdatascience.com
➢ https://medium.com

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DEPARTMENT OF COMPUTER APPLICATIONS
CURRICULUM FOR ADD-ON PROGRAM

MODERN TECHNIQUES IN DATA SCIENCE- AN INTRODUCTION

QUESTION PATTERN

Max. Marks: 50   Theory Part: 50 marks

Theory Part   Max. Marks: 50   Duration: 1 hr

Part A

Objective type Question (25 *2 = 50 marks)

- Five questions from each unit will be given for exam.
- Each question consists of multiple choice answers.
- Time duration of 60 Minutes will be given.

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CLASS SCHEDULE

Date	Day	Timings	Venue/ Online	No of Training sessions	Tutorials*	Total Hours
		11:00 AM - 1:00 PM		0	2	2
		11:00 AM - 1:00 PM		1	2	5
		11:00 AM - 1:00 PM		1	2	8
		11:00 AM - 1:00 PM		2	2	12
		11:00 AM - 1:00 PM		1	2	15
		11:00 AM - 1:00 PM		2	2	19
		11:00 AM - 1:00 PM		1	2	22
		11:00 AM - 1:00 PM		1	2	25
		11:00 AM - 1:00 PM		3	2	30
		11:00 AM - 1:00 PM		Evaluation		

☐ **Assignment / Case Study / Exercise**

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DEPARTMENT OF COMPUTER APPLICATIONS
CURRICULUM CERTIFICATE COURSE

ACADEMIC YEAR 2021 - 2022

OFFICE AUTOMATION- SYLLABUS

OBJECTIVES:
- [ ] The major objective in introducing the Office Automation course is to impart training for students in Microsoft Office which has different components like MS Word, MS Excel and Power point. The course is highly practice oriented rather than regular class room teaching.

OUTCOMES:
- [ ] To perform documentation
- [ ] To perform accounting operations
- [ ] To perform presentation skills

COURSE DURATION: 30 hrs

WORD PROCESSING   6 hrs

Word Processing: Open, Save and close word document; Editing text – tools, formatting, bullets; Spell Checker - Document formatting – Paragraph alignment, indentation, headers and footers, numbering; printing – Preview, options, merge.

SPREADSHEETS   10 hrs

Spreadsheets: Excel – opening, entering text and data, formatting, navigating; Formulas – entering, handling and copying; Charts – creating, formatting and printing.

POWER POINT   10 hrs

Power point: Introduction to Power point - Features – Understanding slide types – creating & viewing slides – creating slide shows. Applying special object – including objects & pictures – Slide transition – Animation effects.

ACCESS   4 hrs

Introduction to Access – Features – Field – Record – Creating Tables – Creating a Database – Opening a Table / Editing a table / adding new Records – Deleting the Records.
- [ ] Assignment / Case study / Exercise

TEXT BOOKS:

1. Alexis Leon and Mathews Leon, "*Fundamentals of information technology*", Leon Press 1999, 2nd Edition.
2. Peter Norton, "*Introduction to Computers*", Tata McGraw Hill.

REFERENCE BOOK:

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1. Jennifer Ackerman Kettel, Guy Hat-Davis and Curt Simmons, "*Microsoft 2003*", Tata McGraw Hill.

WEB REFERENCE:

➢ NPTEL & MOOC courses titled Office Automation.
➢ https://www.livewireindia.com/microsoftoffice_automation_software_training.php

Date	Day	Timings	Venue/ Online	No of Training sessions	Tutorials *	Total Hours
		01:30 PM - 3:30 PM		2		2
		01:30 PM - 3:30 PM		2	1	5
		01:30 PM - 3:30 PM		2	1	8
		01:15 PM - 4:15 PM		3	1	12
		01:30 PM - 3:30 PM		2	1	15
		01:30 PM - 3:30 PM		2	2	19
		01:30 PM - 3:30 PM		2	1	22
		01:30 PM - 3:30 PM		2	1	25
		01:15 PM - -4:15 PM		3	2	30
		1:30 PM - 3:00 PM		Evaluation		

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QUESTION PATTERN

Max. Marks: 50   **Theory Part 25 marks**   **Practical: 25 marks**

Theory Part   **Max. Marks: 25**   **Duration: 1 hr**

Part A

Objective type Question (1 *10 = 10 marks)

Part B

Answer any 5 questions. Each question carries equal marks (5 * 2 = 10 marks)

Part C

Answer any 1 question. (1 * 5 = 5 marks)

Practical   **Max. Marks: 25**   **Duration: 1 hr**

Question Pattern:

6. For each Question the candidates are asked to write the Aim, Procedure, input and output

7. Write-up: 5 mark

8. Demonstration: 10 mark

9. Viva: 5 mark

10. Output and Result: 5

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DEPARTMENT OF COMPUTER APPLICATIONS
CURRICULUM FOR THE CERTIFICATE COURSE
ACADEMIC YEAR 2021 – 2022
Data Analysis using MS Excel – Syllabus

Course Objective:

The major objective in introducing the Data Analysis using MS Excel course is to impart training for students in Microsoft Office Excel, which has different features like Accounting, Financial and Mathematical functions, sorting, filter, inserting charts etc... The course is highly practical oriented rather than regular class room teaching

Course Duration: 30 hrs

Course Outcome:
- ☐ To perform Calculations
- ☐ Usage of Accounting and Financial Function to solve financial problem
- ☐ Generating Graphs for the given data

Introduction to Excel (3 hours)

About Excel & Microsoft, Uses of Excel, Excel software, Spreadsheet window pane, Title Bar, Menu Bar, Standard Toolbar, Formatting Toolbar, the Ribbon, File Tab and Backstage View, Formula Bar, Workbook Window, Status Bar, Task Pane, Workbook & sheets

Columns & Rows (3 hours)

Selecting Columns & Rows, Changing Column Width & Row Height, Autofitting Columns & Rows, Hiding/Unhiding Columns & Rows, Inserting & Deleting Columns & Rows, Cell, Address of a cell, Components of a cell – Format, value, formula, Use of paste and paste special

Functionality Using Ranges. (3 hours)

Using Ranges, Selecting Ranges, Entering Information Into a Range, Using AutoFill

Creating Formulas. (5 hours)

Using Formulas, Formula Functions – Sum, Average, if, Count, max, min, Proper, Upper,Lower, Using AutoSum,

Advance Formulas (4 hours)

Concatenate, Vlookup, Hlookup, Match, Count, if, Text, Trim

Spreadsheet Charts (4 hours)

Creating Charts, Different types of chart, Formatting Chart Objects, Changing the Chart Type,Showing and Hiding the Legend, Showing and Hiding the Data Table

Data Analysis (5 hours)

Sorting, Filter, Text to Column, Data Validation

PivotTables (3 hours)

Creating PivotTables, Manipulating a PivotTable, Using the PivotTable Toolbar, Changing Data Field, Properties, Displaying a PivotChart, Setting PivotTable Options, . Adding

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Subtotals to PivotTables

Spreadsheet Tools   (3 hours)

Moving between Spreadsheets, Selecting Multiple Spreadsheets, Inserting and Deleting Spreadsheets Renaming Spreadsheets, Splitting the Screen, Freezing Panes, Copying and PastingData between Spreadsheets, Hiding , Protecting worksheets

Making Macros   (2 hours)

Recording Macros, Running Macros, Deleting Macros

The schedule for the course is as follows:

Date	Day	Timings	Venue/ Online	No of Training sessions	Tutorials *	Total Hours
		01:30 PM - 3:30 PM		2		2
		01:30 PM - 3:30 PM		2	1	5
		01:30 PM - 3:30 PM		2	1	8
		01:15 PM - 4:15 PM		3	1	12
		01:30 PM - 3:30 PM		2	1	15
		01:30 PM - 3:30 PM		2	2	19
		01:30 PM - 3:30 PM		2	1	22
		01:30 PM - 3:30 PM		2	1	25
		01:15 PM - -4:15 PM		3	2	30
		1:30 PM - 3:00 PM		Evaluation		

Assignments/Case study/Exercises

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QUESTION PATTERN

Max. Marks: 50   **Theory Part 25 marks**   **Practical: 25 marks**

Theory Part   **Max. Marks: 25**   **Duration: 1 hr**

Part A

Objective type Question (1 *10 = 10 marks)

Part B

Answer any 5 questions. Each question carries equal marks (5 * 2 = 10 marks)

Part C

Answer any 1 question. (1 * 5 = 5 marks)

Practical   **Max. Marks: 25**   **Duration: 1 hr**

Question Pattern:

1. For each Question the candidates are asked to write the Aim, Procedure, input and output
2. Write-up: 5 mark
3. Demonstration: 10 mark
4. Viva: 5 mark
5. Output and Result: 5

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