Course Name	: **Spreadsheet Applications in Business**		
Course Code	: DM 21303		
	(20 sessions of 1.5 Hrs in Term I)		
Credit	: 3.0	**Academic Year** :	2020-2022
Course Faculty	: Prof. Indranil Ghosh		

Background of the Course: This course is an introduction to usage of spreadsheets in solving complex business problems of various domains. This course intends to provide the students the opportunity to develop the skills necessary to create and use spreadsheets efficiently in a business environment. Numerous practical in-depth spreadsheets will be completed throughout the course including creating, editing and formatting spreadsheets and workbooks as well as the creation and application of basic and advanced formulas and functions. Using a problem-solving approach, students will study spreadsheet functions and tools in depth and understand their purposes in business environment.

Course Description: Key endeavor of this course is to provide the adequate skillsets in preparing and organize data in order to carrying out sophisticated analyses using spreadsheets. The student will learn advanced techniques in Microsoft Excel in a Windows network environment. Emphasis will be given on spreadsheet basics such as creating, organizing, and linking worksheets; editing and formatting cells; entering data; creating simple formulas; using simple functions (e.g., average, sum, fill, etc.), etc. Advanced formula writing (involving financial, logical, information, math, statistical, lookup, and date functions), cell addressing modes, multi-sheet addressing techniques, data tools (such as validation, sort, filters, and pivot tables), variable length table design, lookup tables, trend lines, etc. will be discussed with related examples. Data visualization through Excel Chart Wizard for graphical representation and generating reports will be covered in details. Advanced applications using Excel Optimization toolbox and Macros will be explored for solving business cases in the area of sales forecasting, aggregate planning, scheduling of resources, financial analysis, portfolio construction

Course Outcome: After successful completion this course, students will be able to apply knowledge and skills to develop advanced spreadsheet models to solve real world business problems and perform appropriate data visualization for making decisions using the conventional and unconventional tools and add ins of standard spreadsheets.

Study Materials and Resources

1. Accessing and Analyzing Data with Microsoft EXCEEL **(Text)**
   Author: Paul Cornel   Publisher   :   PHI
2. Microsoft Office Excel 2007 for Data Analysis and Business Modeling **(Text)**
   Author : Wayne L. Winston   Publisher   :   PHI
3. Decision Analytics **(Reference)**
   Author : Conrad Carlberg   Publisher   :   Pearson
4. Using Excel for Business Analysis **(Reference)**
   Author : Danielle Stein Fairhurst   Publisher   :   Wiley

Course Plan

Session No.	Topic	Hours
1.	**Introduction to Microsoft Excel (2010) & Making Sense of Data:** i) Understanding Microsoft Excel and Data Analyzer and its Features, Microsoft SQL Server ii) Types of Data & Using Data to Make Decisions iii) Recording Data, Troubleshooting Data Compatibility Issues **Read: Chapter 1 of Paul Cornell**	(0.5+0.5+0.5)
2	**Basic Data Analysis Techniques**: i) Sorting, Summarizing, Trending, Filtering and Formatting Data. ii) Importing, Exporting and Querying Data iii) Working with Relational and Multidimensional Data iv) Working with XML Data v) Charting Data **Read: Chapter 2 of Paul Cornell**	(1+0.5+1+0.5 +1.5)
3	**Introduction to Functions** i) Mathematical, Boolean & Logical Functions ii) Lookup, Index & Match Functions iii) Time and Date Functions iv) Database and Information Functions v) Financial and Statistical Functions	(1.5+1.5+0.5+ 1+1.5)

	Read: Chapter 11, 12, 18 & 19 of Wayne L. Winston	
4.	**Analyzing Data with Microsoft Excel** i) Analyzing Data in Lists ii) Using Analysis Tool Box (Descriptive Statistics, Histogram, Moving Average, Rank/Percentile Tool and Sampling Tool) iii) Applying Conditional Formatting, Sensitivity Analysis iv) Using Solver Add-In for Optimization v) Simple Forecasting with Excel vi) Development of Dashboards vii) Advanced Visualization **Read: Chapter 3 of Paul Cornell**	(1.5+1.5+1.5+ 1.5+1.5+1.5+ 1.5)
5	**Analysis Data with Pivot Table and Pivot Chart Reports** i) Understanding PivotTable and Pivot Chart Reports ii) Analyzing Data with Pivot Table Reports iii) Filtering PivotTable Report Fields iv) Usage of Pivot Table Field List, Toolbar and Field Settings, Filtering Operations, etc. v) Analyzing Data with Pivot Chart Reports **Read: Chapter 4 of Paul Cornell**	(1.5+1.5+1.5+ 1.5+1.5)

Evaluation Pattern

Sl No	Details	Percentage
1	**Class Participation & Attendance (Individual)**	**10**
2	**Project Work**	**20**
3	**Individual Assignments**	**30**
4	**End Term**	**40**