

VOCATIONAL ENHANCEMENT COURSES		
SL. No.	Course Code	Title of the Course
1	UG 21 VE 001	Accounting Information System
2	UG 21 VE 002	Financial Modeling
3	UG 21 VE 003	Human Capital Management (SAP-HCM)
4	UG 21 VE 004	Customer Relationship Management (SAP-CRM)
5	UG 21 VE 005	French Language
6	UG 21 VE 006	Spanish Language
7	UG 21 VE 007	Bank Branch Management
8	UG 21 VE 008	Business Decision using Spreadsheet (Excel)
9	UG 21 VE 009	Application of E-Commerce
10	UG 21 VE 010	Tableau Visualizations
11	UG 21 VE 011	Essential Programming of R
12	UG 21 VE 012	Graphic Designing
13	UG 21 VE 013	Office Automation
14	UG 21 VE 014	Financial Accounting and Control (SAP-FICO)
15	UG 21 VE 015	Hospitality Management
16	UG 21 VE 016	Aviation Management
17	UG 21 VE 017	Air Fair & Ticketing
18	UG 21 VE 018	Hospital Management
19	UG 21 VE 019	Goods and Services Tax
20	UG 21 VE 020	Applications of Analytics in Business
21	UG 21 VE 021	Stock Market
22	UG 24 VE 022	Digital Marketing
23	UG 24 VE 023	Database Management System – HR Perspective
24	UG 24 VE 024	Database Management System – CRM Perspective

Elective Specific VECs:

ELECTIVE 7 - BUSINESS ANALYTICS		
VEC-1	UG 24 VEBA 501	Data Visualization and Storytelling
VEC-2	UG 24 VEBA 601	AI-ML and its Business Applications
ELECTIVE 8 - INTERNATIONAL PUBLIC ACCOUNTING		
VEC-1	UG 24 VEIPA 501	International Auditing & Attestation
VEC-2	UG 24 VEIPA 601	International Tax and Regulation
ELECTIVE 9 - INSURANCE		
VEC- 1	UG 24 VEIN 501	Practice of General Insurance
VEC - 2	UG 24 VEIN 601	Practice of Life Insurance

UG 21 VE 001: ACCOUNTING INFORMATION SYSTEM

COURSE OBJECTIVES:

This course enables the students to understand accounting information systems and to comprehend the links between business structure, processes, performance, and information systems.

Module 1 - Information Systems

3Hrs.

Meaning of System and Information System-Elements of Information System-Components of Information System- Accounting Information System-Classification of Information System

Module 2 - Information Audit

3Hrs.

Information Audit-Differences between Traditional concept of Audit and the latest trends-Applications of Audit and the concepts-System Audit in Internal Environment.

Module 3 - Introduction to E-Commerce

8Hrs.

Meaning of E-commerce-Types of Ecommerce-Role of E-commerce-Framework and EFT-EDI- Components of EDI- Benefits and Types of activities and users

Module 4 - Security and Control Issues in Information Systems

6Hrs.

Meaning of Security-Types of Securities-Firewall-Proxy and Cryptography-Digital Signatures and Certificates-SET

Module 5 - Financial Accounting Systems and Packages

5Hrs.

Books of Original Entry-Ledger and Trial Balance-P/L Account and Balance Sheet-Tally Commands

Module 6 - Financial Analysis using Tally

20Hrs.

Financial Transaction-Funds Flow Statement-Cash Flow Statement Financial Ratios and Analysis- Practicality of the concepts

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Describe the purpose of accounting information systems and the links between business structure, processes, performance, and information systems.
2. Distinguish between information audit and System audit in internal environment.
3. Identify the role of EFT – EDI in the context of E - commerce frame work.
4. Identify the role of SET in the context of security and control issues in Information system.
5. Use Tally software to carry out right from journal to financial statements of financial information system

UG 21 VE 002: FINANCIAL MODELING

COURSE OBJECTIVES

This course enables students to comprehend the meaning and purpose of Financial Modeling and equip them with basic and advanced functions of excel in the context of financial modeling for projected financial metrics of a firm.

Module 1: Financial Modeling – Concepts and Application **5Hrs.**

Meaning of Financial modeling, reasons for using Excel for financial modeling, steps for building a financial model, who builds financial models, hallmarks of a good financial model, Objective of building financial modeling, types of financial models

Introduction to Understanding the Basic Features of Excel - Introduction to Excel, Understanding Advanced Features of Excel. Sum function, Sum-if/s function, Average, Average-if/s function, Count function, Countblank, Counta, Countif/s, Cell Referencing, Absolute Cell Referencing, Relative Cell Referencing, Mixed Cell referencing, Match function, Index function, PMT, PV, FV, If and AND Functions

Module 2: Advanced Excel Functions **8 Hrs.**

What if analysis, Sensitivity Analysis, One way Data Table, Two Way Data Table, Goal Seek function, Scenario manager and Solver functions, Monte Carlo Simulation, Simulation using Excel Generating Random Numbers - Building Models in Finance using Simulation

Module 3: Preparation of Forecasted Financial Statement **8 Hrs.**

Preparing Comparative Financial Statement - Common-sized Financial Statement - Ratio Analysis - Du Pont Analysis using Excel Spreadsheet - Forecasting of Financial Statements - Case Study

Module 4: Financial Modeling for Project and Francize **8Hrs.**

Venture capital financing eligibility – Case study - Financial Modeling for Project Appraisal - Identify the Revenue Drivers and Cost Drivers of Project Business Model and Francize Business model - Use of Functions like Payback Period - Discounted Payback Period - Net Present Value (NPV) and Internal Rate of Return (IRR) - Francize - Case Study

Module 5: Financial Modeling for Company Valuation **8 Hrs.**

Discounted cash Flow (DCF), DCF in the Valuation of Company, Weighted Average Cost of Capital (WACC), Terminal Value, Enterprise Value and Equity Value, Discounted Cash Flow – Case study

Module 6: Advanced Financial Models **8 Hrs.**

Designing Advanced Financial Models - Working Capital Schedule, Property and Plant Equipment Schedule, Debt Schedule, Forecasting of three financial statements (Income statement, balance sheet and cash flow statement) linking with Schedules

Skill development

- A group of students visit business premises and conduct interviews to study the Business Model, revenue models
- A group of students visit Restaurants/ KFC / Automobile dealers/ Hospitals/ Medical stores/ retail outlets and identify cash inflows and cash outflows, footfalls.
- A group of students develop assumptions for the preparation forecasted financial statements with live historical financials from money control.com
- Students prepare forecasted financial statements with live historical financials from money control.com

COURSE OUTCOMES

After completion of the course the students will be able to

- Explain the meaning and purpose for which Financial Modeling is built and the use of basic and advanced features of excel in the context of financial modeling applications
- Apply Advanced Excel functions to present behaviour of sensitivities to the projected financial metrics of a firm
- Develop a Financial Modeling for forecasting of Financial Statements with Analysis and interpretation of Financial statements by using excel
- Construct a Financial Modeling for Project and franchise after identifying the Revenue Drivers and Cost Drivers of those Business models
- Develop a Financial Modeling for equity valuation by using discounted cash Flow (DCF) Model.
- Apply advanced Financial Modeling technique forecasting of three financial Statements with linking necessary schedules.

Books for Reference

- *Michael Rees 'Principles of Financial modeling' Wiley- 2018*
- *Michael Samonas 'Financial forecasting, Analysis and Modeling' Wiley- 2015*
- *Simon Benninga 'Financial Modeling' MIT press- 2014*
- *Jordan Goldneior. Advanced Excel Essentials- 2013*
- *John walkenbach. Excel 2013.*
- *Gupta Vijay Statistical Analysis with Excel, VJ Books Inc., Canada 2002*
- *Winston L. Wayne 'Microsoft Excel 2013: Data Analysis and Business Modeling', Microsoft Press, U.S.A.2013*
- *Financial Analysis and Modeling Using Excel and VBA, Chandan Sengupta, Wiley 2014*
- *Taxmann's Financial Management using Excel Spreadsheet, Ruzbeh J. Bodhanwala 2013*

UG 21 VE 003: HUMAN CAPITAL MANAGEMENT

COURSE OBJECTIVES

The course aims to acquaint learners with the concepts of the functionality of ERP and SAP in the management of Human Resource.

Module 1 - Introduction to SAP

5Hrs.

Introduction, Overview of ERP and SAP, Login Process, Customization of screens, user creation, defining a company code, assigning a company code to the company defining the personnel areas, assigning the personnel areas to the company code

Module 2 - Personnel Structure

10Hrs.

Define Employee Groups, Define Employee Sub Groups, Define the payroll area and assigning the employee sub group to the employee group

Module 3 - Organization Management

10 Hrs.

Create an Organizational Unit, Set up number of a assignment for plan versions, Maintain Number ranges in Organizational Management, Set up Transport connection and Integration.

Module 4 - Personal Administration

10Hrs.

Maintain Number ranges of Personal numbers, Maintain User Parameters, Define Employee Attributes, set up personal action type, Maintaining Personnel actions.

Module 5 - Recruitment

5 Hrs.

Creating new position, Applicant numbers creation, Create Media, Create Recruitment Instrument, Creating Advertisement and recruitment structure

Module 6 - Time Management

5 Hrs.

Define daily work schedules, Defining of rules and their integration with work schedule, Case Studies

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Illustrate how the functionality of ERP and SAP work and assigning a code to company and personnel area to the company code.
2. Show how to define employee group, employee sub group and payroll area to create personnel structure in ERP – SAP.
3. Show how to maintain number ranges in organizational management in creating organizational unit in ERP – SAP.
4. Illustrate how to maintain number ranges of personal numbers and personal actions under ERP – SAP personnel administration.
5. Show how to run a recruitment process through ERP – SAP recruitment structure.
6. Show how to integrate with work schedule by defining daily work schedule and rules in ERP – SAP time management structure.

Book for Reference

ॐ *P.K Agrawal- Sap HR Time Management Technical Reference- 2nd Edition- Prentice Hall, India 2014*

UG 21 VE 004: CUSTOMER RELATIONSHIP MANAGEMENT

COURSE OBJECTIVES

The course aims to acquaint learners with the concepts of ERP and SAP CRM functionalities in managing customer relations.

Module – 1: Introduction to SAP

5Hrs

Overview of ERP and SAP, Login Process, Customization of screens, user creation, sending messages, technical and functional, logout process, SAP Services, Cooperative business scenarios, CRM Architecture, Component Integration.

Module – 2: Master Data

8 Hrs

Organizational Management, Business Partner, and Product catalogues, Warranty Management, Solution Database, Territory Management.

Module – 3: CRM- Functions

8Hrs

Transactions, Date Management, Text Management, Pricing, credit management, multilevel categorization, funds management and claims management, Account Planning, Activity Management.

Module – 4: CRM Sales and Service

8Hrs

Opportunity Management, Quotation and Order Management, Taxes and Rebate processing, Contract Management, Product Service letters, Web requests

Module – 5: Marketing Channelization and Scenarios: Web channel through B2B and B2C

8 Hrs

ICSS Service- Internet Customer Self Service, Campaign Management, Segmentation, Lead to cash, Email work list, Template designer, Survey tool.

Module – 6: CRM Analytics

8 Hrs

Embedded Competitor Analysis in Opportunity Management, Dash board on Home page, Applications and Case Studies regarding analytics

Skill Development

(These activities are only indicative, the Faculty member can innovate)

- Illustrate how the functionality of ERP and SAP CRM architecture works and the customization of screens and managing partnering relationships with customers and suppliers.
- Show how to maintain organizational management right from business partner to claim management in ERP – SAP CRM.
- Describe the key capabilities or processes and scenarios of SAP CRM sales and service.

- Show how to integrate the internet customer self-service for B2B and B2C channels.
- Show how to run CRM analytics through embedded competitors' analysis in opportunity management.

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Illustrate how the functionality of ERP and SAP CRM architecture works and customization of screens and managing partnering relationships with customers and suppliers.
2. Show how to maintain organizational management right from business partner to claim management in ERP – SAP CRM.
3. Describe the key capabilities or processes and scenarios of SAP CRM Sales and service.
4. Show how to integrate the internet customer self- service for B2B and B2C channels.
5. Show how to run CRM analytics through embedded competitors' analysis in opportunity management.
6. analysis in opportunity management.

UG 21 VE 005: FRENCH

COURSE OBJECTIVE

This course aims to develop the understanding, speaking and writing French skills of students and equips them with the knowledge to work with the language.

Module 1 - Bonjour!

5 Hrs

Basic phrases, how to introduce one and others. Grammar: Different accents in French, gender differentiation, definite and indefinite articles, verbs être and avoir. Vocabulary: Numbers till 20, professions and nationality

Module 2 - J'habite ici

10 Hrs

Talk about where one lives and ask other people. Grammar: -ER ending verbs conjugation, singular and plural form of nouns, prepositions à and en. Vocabulary: numbers till 100, cities and countries.

Module 3 - Chez moi

6 Hrs

Talk about family and your home. Grammar: possessive adjectives mon,ma,mes..- IR ending verb conjugation. Vocabulary: Family, Parts of the house.

Module 4 - L'heure

6 Hrs

Telling time, Grammar: -RE ending verb conjugation, preposition de, contraction of prepositions. Vocabulary: Numbers, the day, days of the week, months of the year.

Module 5 - La mode

7 Hrs

Talking about clothes and describing people. Grammar: Adjectives and their accordance, Irregular verbs. Vocabulary: Colours, clothes, parts of the body, characteristics of people.

Module 6 - Qu'est-ce que tu fais?

5 Hrs

Talk about weather, sports and weekend activities. Grammar: Irregular verb conjugation, nouns and gender rules. Vocabulary: Weather, seasons, sports, leisure activities, likes and dislikes

Module 7 - Une ville

7 Hrs

Talk about places in town and asking directions. Grammar: Interrogatives and question patterns. Vocabulary: Places in a city, directions, Prepositions.

Module 8 - Mmm, c'est bon!

6 Hrs

Talk about food and drink, ordering at a restaurant. Grammar: Negation of verbs, portative articles Vocabulary: Food and drink

Module 9 - L'avenir

8 Hrs

Talking about future plans Grammar: using verb aller to express near future

Skill Development

- Write an essay on the history of the French language and its distribution in the world.
- Elucidate 10 unique customs or cultures in the foreign nation.

UG 21 VE 006: SPANISH

COURSE OBJECTIVE

This course aims to give a basic understanding of the Spanish language to the students and equips them to speak it.

Module 1 - Primeros contactos **7Hrs**

Basic phrases, give information about oneself and others. Grammar: Nouns, gender, definite and indefinite articles, the verbs ser, tener and estar. Vocabulary: Countries, cities, nationalities, origin, professions, studies and alphabet.

Module 2 - Vida de estudiantes **8Hrs**

Talk about student life, classes, telling time and dates. Grammar: AR,ER,IR regular verb conjugation, telling time, verbs of obligation,. Vocabulary: Numbers t i l l 100 , days of the week, months of the year, activities and leisure, academic timetable.

Module 3 - Donde vives? **5 Hrs**

Talk about where one lives, the house and family. Grammar: reflexive verbs, possessive adjectives, singular and plural forms of nouns. Vocabulary: parts of the house, the family, ordinal numbers.

Module 4 - Una ciudad **5 Hrs**

Talk about your city, asking for directions. Grammar: verbs like gustar, comparatives, superlatives, interrogatives. Vocabulary: Places in a city, directions.

Module 5 - La moda **5 Hrs**

Talk about clothes and describing people. Grammar: Adjectives and their accordance. Vocabulary: Clothes, colours, characteristics of people.

Module 6 - Cena fuera **5 Hrs**

Talk about food and drink, ordering at a restaurant. Grammar: Irregular verbs, partitive articles Vocabulary: food and drink

Module 7 - El futuro y el pasado **10Hrs**

Describe things in the past and future. Grammar: verb acabar for expressing recent past activities and verb ir to express the near future.

Skill Development

- Write an essay on the history of the French language and its distribution in the world.
- Elucidate 10 unique customs or cultures in the foreign nation.

UG 21 VE 007: BANK BRANCH MANAGEMENT

COURSE OBJECTIVES

The course equips students with the understanding of the role, functions and services offered by Banking and NBFCs in India.

Module 1 - Overview of Banking 5Hrs

Overview of Banking, Financial Services and NBFC's in India. Key products and services offered by the banking and financial services

Module 2 - Financial Accounting and Mathematics 8Hrs

The knowledge of financial mathematics and accounting concepts and skills for preparation of bank financial statement and tools to interpret financial health of a bank

Module 3 - Retail Banking-Product & Processes 8Hrs

Introduction, Meaning and Definition, Importance, and Classification of private and public sector bank's retail and other products(Generic Product & Processes, Public sector banks (SBI and non SBI Bank and private sector bank)

Module 4 - Bank conversion and licensing new bank norms 10Hrs

Introduction, Meaning and knowledge of conversion of unscheduled bank to scheduled bank. Guide lines of Reserve Bank of India for licensing new banks

Module 5 - Regulatory Environment audit of Banks and RBI norms and LFAR preparation and analysis of impact of GST on banking sector. 8 Hrs

Preparation of LFAR and interpretation of RBI guidelines to classify advances into NPA, Statutory and concurrent audit overview and reporting and analysis of impact of GST

Module 6 - Professional Skills-Grooming / Etiquette and Effective Business Communication 6 Hrs

Banking customer Service Skills and Selling Skills. Techniques Of various bank products with importance to professional and Behavioral skills required in the banking Industry

Skill Development

(These activities are only indicative, the Faculty member can innovate)

- Interview 10 employees/managers of banks and use the report bridge the gap between textual knowledge and practical banking.
- Find distinct latest services rendered by a national bank of your choice to its customers.
- Complete a study on the policies of international banking system.

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Explain the role, functions and services offered by Banking, financial services and NBFC in India.
2. Construct and interpret the financial statements and financial performances of a Bank.
3. List the products and services offered by SBI, Non – SBI, private and public sector Banks in India in the context of retail Banking.
4. Examine the process of conversion of unscheduled bank into scheduled bank and guidelines of RBI for licensing new banks.
5. Examine the audit of Bank, preparation of LFAR, NPA classification as per the guidelines of RBI.
6. Identify the professional and behavioural skill sets to sell and provide bank products and customer services respectively.

Books for Reference

- ❧ *ICAI Material with regard to LFAR*
- ❧ *N.S Toor, Accounting and Finance for Bankers Guide to JAIIBQ&A, 14th Edition, A Publisher, 2019*

UG 21 VE 008: BUSINESS DECISION USING SPREAD SHEET

COURSE OBJECTIVE

The course enables students to understand the fundamentals of Microsoft Excel and equips them with data analytics using excel.

Module 1: Basics of Excel

9 Hrs

Referring, functions and formulas, Text functions, date and time - Formatting - Font formatting, borders, alignment, number formatting, as well as the Excel styles and themes.

Module 2: Functions

9 Hrs

Math functions, financial functions, charts, Pivot table and Pivot chart. Statistical Functions- Descriptive statistics, Basic graph formatting, frequency functions, histograms, data table (one way and two ways), and goal seek, scenario manager, Vlookup and H lookup, Anova, random numbers generating, Solver.

Module 3: Data Formatting

9 Hrs

Auto filter, advanced filter, sorting, Error proofing, Custom formatting, conditional formatting, data validation, data cleaning, text formatting

Module 4: Bivariate Analysis

9 Hrs

Correlation, Methods of Regression (Scatter plot), Simple Linear Regression, T test and chi square

Module 5: Time Series

9 Hrs

Forecasting techniques, ARIMA model, Sensitivity and Simulation.

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Present working knowledge on MS Excel for business decision making.
2. Perform advanced functions in Excel such as descriptive statistics and solver.
3. Perform data formatting and table preparation for conditional parameters using Excel.
4. Create simple bi-variate analysis models of provided data with help of Excel.
5. Use forecasting techniques in Excel.

Books for Reference

- ❖ *MICROSOFT EXCEL 2019: DATA ANALYSIS & BUSINESS MODEL* by L. Winston Wayne : ISBN 978-9389347180
- ❖ *Excel 2019 All-In-One* by Lokesh Lalwani : ISBN 978-9388511582

UG 21 VE 009: APPLICATION OF E-COMMERCE

COURSE OBJECTIVES

This course aims to acquaint the learners with basic concepts of e-commerce and enable them to identify, define and differentiate the various modes of electronic commerce.

Module 1: Overview of Electronic Commerce **5 Hrs**

Introduction, Main activities of ecommerce, Broad goals of e-commerce, Prospects for ecommerce, Pre-requisites for ecommerce, ecommerce applications, Types of electronic commerce-Business- to Business (B2B), Business to Consumer (B2C), Business to Government (B2G) Consumer to Consume (C2C) Advantages of ecommerce(Benefits to Organization, Benefits to society) Limitations of e-commerce (Non-technical limitations, Technical limitations), Value chains in electronic commerce

Module 2: Electronic Commerce for Service Industries **8 Hrs**

Information Technology services- Broker based services, Travel and tourism services, Employment Placement and the job market, Real Estate, Trading stocks online, Online Publishing, Marketing and Manufacturing industries, e-agriculture in India.

Module 3: Electronic Commerce and Retailing **8 Hrs**

E-commerce and retail industry, vision of online retailing in ecommerce, today's E-tailing environment, ecommerce and marketing, Incentives for engaging in ecommerce, driving forces behind ecommerce, ecommerce and economic efficiency, impact of ecommerce on business.

Module 4: E-commerce and Customization **8 Hrs**

Global Markets- Understanding the structure of virtual Enterprises work flow Automation and coordination, customization and internal commerce-customization of services. Order selection and prioritization: Order scheduling, fulfilling and delivery, Order billing and payment management; Post sales services. Recent Trends in Ecommerce-Big Data Analytics, Cloud Computing, M-Commerce, S-Commerce, O2O Ecommerce.

Module 5: E-commerce Supply Chain Management **8 Hrs**

Integrated Logistics and Distribution, Integrated Marketing and Distribution-Efficient customer response- Agile Manufacturing Product and service digitization; Remote servicing procurement

Module 6: Electronic Data Interchange (EDI) **8 Hrs**

Features of EDI service arrangement; Internet based EDI; EDI architecture and standards; VANs; Costs of EDI infrastructure; Reasons for slow acceptability of EDI for trading

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Explain e-commerce on business models and strategy
2. Enumerate the technological advancements in various service sectors
3. Illustrate convergence of business relationship through recent technologies.
4. Interpret various terminologies of electronic commerce and customization
5. Explain E-commerce in logistics, distribution and marketing
6. Enumerate concepts of Electronic Data Interchange

Books for Reference

- ☞ *Kenneth C. Laudon, E-Commerce : Business, Technology, Society, 4th Edition, Pearson*
- ☞ *S. J. Joseph, E-Commerce: an Indian perspective, PHI*
- ☞ *S. Jaiswal, Doing Business on the Internet: E-Commerce (Electronic Commerce for Business), 2015 Revised Edition, Galgotia Publications*
- ☞ *CSV Murthy, e-Commerce– Concepts, Models, Strategies, 2015 Revised Edition, Himalaya Publishing House*

UG 21 VE 010: TABLEAU VISUALIZATIONS

COURSE OBJECTIVES

This course equips students to develop the ability to effectively use Tableau software by understanding its features and to create meaningful visualizations and interactive dashboards.

Module 1: Business Visualization using Tableau **9 Hrs.**

Importing data, Creating dashboards from services such as Salesforce, and Google Analytics - Shaping and Transforming Data with Business Calculations - Working with Tableau: Bringing in and Analysing Data- Understanding data connections,

Module 2: Tableau Basic Reports **8 Hrs.**

Parameters, Groups, Edit Groups, Sets, Combined Sets, Data Labels, Folders, Sorting Data, Adding total, sub-total, grand-total to reports

Module 3: Charts in Tableau **12 Hrs.**

Area chart, Bar chart, Box plot, Bubble chart, Bump chart, Bullet graph, Circle views, Dual combination charts, Dual line charts, Funnel chart, Gantt chart, Grouped bar charts, Heatmap, Histogram, Cumulative histogram, Line chart, Lollipop chart, Pareto chart, Pie chart, Scatter plot, Stacked bar chart, Text Label, Tree map, Word cloud, Waterfall chart, Geographic map, Filled map, Cross tab, Combined Axis, Motion chart

Module 4: Tableau Calculations and Filters **8 Hrs**

Calculated fields, Calculating running total, Conditional calculations, Basic expressions, Table calculations, Level of detail expressions, Filters introduction, Quick filters, Filters on dimension, Conditional filters, Filters on measures, Contextual filters, Data Source filters

Module 5: Tableau Dashboards **8 Hrs.**

Adding worksheets, Creating Dashboards, Format Dashboard layout, Dashboard objects, Create filters on dashboard, Publishing and sharing dashboards

COURSE OUTCOME

After completion of the course the students will be able to:

1. Develop the ability to effectively use Tableau software to create meaningful visualizations
2. Utilize data from multiple sources to create interactive dashboards
3. Gain an understanding of Tableau's features such as parameters, calculated fields, and custom calculations
4. Understand how to effectively communicate data insights through visualizations

Reference Books

1. *Mastering Tableau 2021: Implement advanced business intelligence techniques and analytics with Tableau, 3rd Edition* - ISBN-13 : 978-1800561649
2. *Visual Analytics with Tableau* - ISBN-13 : 978-1119560203

UG 21 VE 011: ESSENTIAL PROGRAMMING OF R

COURSE OBJECTIVES

This course equips students with basics of R programming for data analytics and data-driven decision making.

Module 1: Introduction to R **9 Hrs.**

Overview of R Programming - Downloading and installing RStudio - Input and Output statements - Help of Function - Viewing documentation - General issues in R - Variables - Data Types - Numeric vs Integer - Complex - Character and Strings - Boolean - Identifiers - Expressions - Vectors - Matrix - Arrays.

Module 2: Working with Loops and Functions **9 Hrs.**

If-else branches, Equality and relational operators, Boolean operators and expressions, identity operators, Code blocks and indentation, Conditional expressions Loops, While loops, For loops, Nested loops, Break and continue, Loop else, User-defined function basics, Returning values from functions, Reasons for defining functions, Function arguments.

Module 3: Data Handling and Analysis **9Hrs.**

Packages in R - Important packages - Basic data handling with .txt - Working with CSV and Excel files - Dataframes - Files Data cleaning and Treatment - Filters and Grouping - Descriptive statistics - Central tendency measure - Exploratory Data Analysis - HR Analytics - Sales Data Analytics - Social Media Analytics

Module 4: Data Visualizations **9 Hrs.**

Need for data visualization - Bar plot - Line plot - Plotting categorical data - Stacked bar plot - Histogram Plot - Pie chart / 3D pie chart - Scatter plot - Box plot - ggplot - Axes, titles and legends - Colors and themes - Time series Analysis - RShiny - Structure of a Shiny App - Create simple Apps and Dashboards using RShiny

Module 5: Regression and Analytics **9Hrs.**

Basics of linear regression, working with simple linear regression - Cross validation - Overfitting and underfitting - Multiple regression - Non-linear regression- Logistic regression models - Principles of Decision trees - Building Decision trees with R

Reference Books

- de Vries, A., Meys, J. (2015). R For Dummies. United Kingdom: Wiley.*
Wickham, H., Grolemund, G. (2016). R for Data Science: Import, Tidy, Transform, Visualize, and Model Data. United States: O'Reilly Media.

UG 21 VE 012: GRAPHIC DESIGN

COURSE OBJECTIVES

The course is designed to enable students to use the tools of professional design software, to appraise and critique designs based on the visual qualities and technical skills relevant to graphic design.

Module 1: Introduction to Graphic Design **15 Hours**

Introduction to Graphic Design- Evolution of Graphic Design; Design-definition, design with a purpose, design as a communication tool, language and grammar of design, visual language and creativity; elements of design: line, shape, form and space, negative space, volume and mass, value, colour, texture.

Module 2: Design Principles and Process **15 Hours**

Design Principles and Process – balance, contrast, harmony, rhythm, proportion, emphasis, scale and unity. Focal Point and Visual Hierarchy; movement; Design process -problem definition, information gathering, ideation, design solution and implementation; message presentation from concept to visual: thumbnails to roughs to comprehensives and output.

Module 3: Colour Fundamentals and Typography **15 Hours**

Colour Fundamentals and Typography: Defining colour, identity of colour, chromatic interaction; colour systems; emotions and messages. Colour and unity, colour and variety, warm and cool colours, colour and design. Typography – classification groups and subgroups, families, fonts; serifs, sans serifs, hand formed and specialised; craft of typography – point system, selection and use of fonts – type specification

SKILL DEVELOPMENT

(These activities are only indicative, the faculty members can innovate)

1. Design by using basic shapes
2. Exercises on creating perspective
3. Design by using colour
4. Design an image to create a story for social media.
5. Design Process- Research to Design.
6. Exercises on creating thumbnails
7. Exercises on using calligraphy
8. Submit a drawing and design portfolio at the end of the semester.

COURSE OUTCOMES

After completion of the course the students should be able to:

1. Use the tools of professional design software
2. Analyze and critique designs based on the visual qualities and technical skills relevant to graphic design.
3. Create designs that communicate and articulate their ideas.

Books for Reference

- ୨୧୧ Baird, R. N., Turnbull, A.T. & McDonald Duncan. (1987). *The Graphic Communication*. Canada: Holt, Rinehart and Winston.
- ୨୧୧ Crow, W. C.(1986). *Communication Graphics*. New Jersey: Prentice-Hall
- ୨୧୧ Dodson, M. & Palmer, J. (1995). *Design and Aesthetics – A Reader*. London: Routledge. Hashimoto, A. & Clayton, M. (2009). *Visual Design Fundamentals: A Digital Approach*, 3rd Ed. Boston: Course Technology.
- ୨୧୧ Meggs, P. B. (1992). *Type and Image: The Language of Graphic Design*. New York: John Wiley and Sons Inc.
- ୨୧୧ Samara, T. (2014). *Design Elements: A Graphic Design Manual*. 2nd Ed. Massachusetts: Rockport Publishers.

UG 21 VE 013: OFFICE AUTOMATION

COURSE OBJECTIVES

The course aims to equip students with the basics of MS Office applications required in office automation of business.

Module 1: Starting with MS-Word:

10Hours

Introduction to MS-Word: Understanding the start screen, Creating a new blank document, The word screen, How Microsoft Word works, Understanding the quick access toolbar, Understanding the status bar, Exiting safely from Word.

Documents in Word: Creating documents in word, Typing text, the save as place, Checking spelling and grammar, Page zooming, Viewing the ruler, Showing paragraph marks, Counting words. Viewing multiple pages, Splitting the window, Understanding document views, Changing document views, Understanding read mode, Viewing a document in read mode, Using resume reading.

Working with text: Selecting text using the mouse, Selecting text using the keyboard, Editing text in insert mode, Editing text in overtype mode, Deleting text, Using undo, Using redo, Understanding find and replace, Finding words, Replacing words, Using go to, Understanding cutting and copying, Cutting and pasting, Copying and pasting, Drag and drop cutting, Drag and drop copying, Using the clipboard task pane

Text appearance and Paragraphs: Understanding font formatting tools, changing fonts, Changing font size, Making text bold, Italicizing text, Underlining text, Highlighting text, Changing text color, Using the format painter. Understanding paragraph formatting, Understanding text alignment, Changing line spacing, Changing paragraph spacing, Indenting paragraphs, Out denting paragraphs, Starting a bulleted list, Adding bullets to existing paragraphs, Removing existing bullets, Starting a numbered list, Numbering existing paragraphs, Removing existing numbers, Shading paragraphs, Applying borders to paragraphs, Using the paragraph dialog box.

Working with pages: Changing page margins, Setting custom margins, Changing page orientation, Changing paper sizing, Setting custom paper sizes, Inserting page breaks, Removing page breaks, Inserting page numbers, Formatting page numbers, Removing page numbers.

Module 2: Table and Images in MS-Word

10 Hours

Tabs and tables: Using default tabs, Setting tabs on the ruler, Modifying tabs on the ruler, Setting tabs in the tabs dialog box, Setting tab leaders, Setting bar tabs, Setting mixed tabs, Removing tabs, Understanding tables, Creating a table, Adding data to a table, Selecting in tables using the ribbon, Selecting in tables using the mouse, Inserting columns and rows, Deleting columns and rows, Changing column widths, Changing row heights, Auto fitting columns, Shading cells, Modifying borders, Adding

custom borders, Choosing a tablestyle.

Clip Art and pictures: Understanding clip art and pictures, Inserting clip art, Selecting clip art, Applying text wrapping styles, Positioning clip art, Resizing clip art, Applying picture styles to clip art, Resetting clip art, Deleting clip art, Inserting a picture, Inserting an online picture, Resizing a picture, Changing the picture, Cropping a picture.

Performing a mail merge: Understanding mail merge, Understanding the mail merge process, Creating a recipient list, Creating the starting document, Starting the mail merge wizard, Selecting a recipient list, Inserting mail merge fields, Previewing the merged documents, Completing the merge.

Printing your documents: Understanding printing, Previewing your document, Quick printing, Selecting a printer, Printing the current page, Specifying a range of pages, Specifying the number of copies

Module 3: MS- Excel- I

10 Hours

Introduction to MS- Excel: The Excel Environment, The title bar, the ribbon, Scroll bars, The Microsoft office button, the quick access toolbar, the formula bar, the workbook window, the status bar, the workbook view buttons, the zoom slider, the mini toolbar, keyboard shortcuts.

Creating Basic Workbooks: Creating New Workbooks, Saving Workbooks, Closing Workbooks, Opening Workbooks, Selecting Cells, Entering Text into Cells, Entering Numbers into Cells, AutoComplete, Pick from Drop-Down List, Using the “Window” Command Group, Switching to Full Screen View, Renaming Workbooks, Working with Excel File Formats.

Using Ranges and Formulas: Selecting Ranges, Ranged Data Entry, Using AutoFill. Ranged Formula Syntax, Simple Formula Syntax, Writing Formulas, Using AutoSum, Inserting Functions 4.6- Editing a Range, Formula AutoCorrect, Auto Calculate.

Copying & Pasting Formulas: Relative References and Absolute References, Cutting, Copying & Pasting Data, Auto Filling Cells, The Undo Button, The Redo Button.

Columns & Rows: Selecting Columns and Rows, Adjusting Column Width and Row Height, Hiding and Unhiding Columns and Row, Inserting and Deleting Columns and Rows.

Formatting Worksheets: Formatting Cells, The Format Cells Dialog Box, Clearing All Formatting from Cells, Copying All Formatting from Cells to Another Area, Moving between Worksheets, Selecting Multiple Worksheets, Inserting and Deleting Worksheets, Renaming Worksheets, Coloring Worksheet Tabs, Copying or Moving Worksheets

Module 4: MS- EXCEL- II

7 Hours

Named Ranges: Naming Ranges, Creating Names from Headings, Moving to a Named Range, Using Named Ranges in Formulas, Naming 3D Ranges, Managing Named Ranges

Conditional Formatting and Cell Styles: Conditional Formatting, Finding Cells with Conditional Formatting, Clearing Conditional Formatting, Using Table and Cell Styles.

Paste Special and Sharing Workbooks: Using Paste Special, Pasting Linked Formulas, Sharing Workbooks, Highlighting Changes, Reviewing Changes, Using Comments, Compare and Merge Workbooks.

Creating Worksheet Charts: Creating Charts, Selecting Charts and Chart Elements, Moving and Resizing Charts, Changing the Chart Type, Changing the Data Range, Switching Column and Row Data, Choosing a Chart Layout, Choosing a Chart Style, Printing Charts, Deleting Charts. Editing and Formatting Charts: Formatting Chart Objects, Inserting Objects into Chart, Changing Chart Labels, Changing Axes Display, Changing the Chart Background, Applying Chart Analysis Lines, Naming Charts, Applying Shape Styles to Chart Elements, Applying WordArt Styles to Chart Elements, Saving Custom Chart Templates

Module 5: MS-POWER POINT

8 Hours

Getting acquainted with power point:

The PowerPoint Environment, The Title Bar, The Ribbon, The Microsoft Office Button, The Quick Access Toolbar, The Scroll Bars, The Presentation View Buttons, The Zoom Slider, The Status Bar, The Mini Toolbar, Keyboard Shortcuts.

Creating basic presentations and presentation views:

Opening Presentations, Closing Presentations, Creating New Presentations, Saving Presentations, Inserting New Slides, Applying Slide Layouts, Using the “Package for CD” Feature, Working with PowerPoint File Formats Normal View, Slide Sorter View, Notes Page View, Slide Show View.

Using text, clip art and smart art:

Adding Text to Slides, Basic Object Manipulation, Font Formatting, Paragraph Formatting, Applying Custom Bullets and Numbering, Using Tabs, Setting Text Box Options, Checking Spelling. Inserting Clip Art and Pictures, Basic Graphic Manipulation, Using Picture Tools, The Format Picture Dialog Box. Inserting and Manipulating SmartArt, Formatting SmartArt.

Using slide show view and printing your presentation:

Running a Slide Show, Using Custom Shows, Using Page Setup, Setting the Slide Header and Footer, Using Print Preview, Printing.

COURSE OUTCOMES

After the completion of the course students will be able to:

1. Understand the basics of MS Word.
2. Apply the concepts of MS Word in creating tables and charts.
3. Understand the working of spreadsheet
4. Implement the working of basic spreadsheet with formula, macros etc.,

5. Determine the various tools and its applications in power point presentations.

Books for Reference

📖 *Laura Acklen et al, Microsoft Office 97 Professional Essentials,EEE Que E&T, PHI (1998).*

📖 *Jennifer fulton, Sherri Kinkoph, and Joe Kraynak, The Big Basics Book of Microsoft Office 1997, PHI, 1998.*

📖 *Sanjay Saxena, A First Course in Computers (Based on Windows 8 And MSOffice 2013) Vikas Publishing 2015.*

UG 21 VE 014: FINANCIAL ACCOUNTING AND CONTROL

COURSE OBJECTIVE:

This course equips students with skills to prepare and present financial statements using software for financial accounting and control.

Module 1: Introduction to SAP

5 Hrs.

History of SAP – Different SAP FICO Modules – Introduction to SAP FICO Enterprise structure – Creation of the company – Company code – Business Area – Functional Area – Segment Area – FM Area – Financial Accounting Global settings – Fiscal year variant – Posting period – Document type – Posting keys – Field status variant

Module 2 – New General Ledger Concept

8 Hrs.

Maintenance of Leading & Non leading ledger – Activation of Non-Leading ledger – Scenario & customer fields for non -leading-ledgers – Ledger group – Document splitting concept – Chart of accounts – Accounting groups – Creation and maintenance of account master – Transaction entry – Document parking and holding – Recurring entry/sample document

Module 3- Cash, Accounts receivable/Payables and Asset Accounting

8 Hrs.

Maintenance of house bank – Maintenance of cheque lots – Creation of customer/vendor master record – Invoice entry – Incoming/outgoing payments – Automatic payment programmer – Special GK Ledger – Dunning – Payment terms - Chart of Depreciation – Asset classes – Account determination – Creation of asset – Acquisition of asset – Retirement of asset – Depreciation run – Scrape of asset – Transfer of asset

Module 4 – Controlling and Cost Center Accounting

7 Hrs.

Maintain controlling area – Maintain versions – Maintain co-documents no ranges – Maintenance of cost elements – Maintenance of cost center master – Maintenance of activity types – Planning of cost center – Maintenance of Internal orders – Settlement of internal order – Budgeting of internal order

Module 5 – Product Cost Controlling

7 Hrs.

Cost estimation – Price updating – Cost sheet maintenance – Costing variant maintenance – Work in progress calculation – Variance calculation – Order settlement

Module 6- Profitability Analysis

6 Hrs.

Maintenance of operating concern – Assign operating concern to controlling area – Assign quantity fields and assign value fields – Direct posting for FI-MM – Report painter configuration – Execution of reports – Profit center accounting – Controlling area settings – Maintenance profit center – Assignment of sales revenue account to profit center – maintain number ranges for profit center local document – execution of profit center report

Module 7 – Financial Statement

4 Hrs.

Configuration of financial statement versions – Execution of reports – Year-end closing activities – Period -end closing activities.

COURSE OUTCOMES:

1. *Understand the SAP FICO enterprise structure and the modules of SAP FICO.*
2. *Analyse the different accounting groups and crating different ledgers and accounting master.*
3. *Understand the creating of accounts payable, receivable and asset registers.*
4. *Evaluate the planning of the cost centre and maintenance of cost center master.*
5. *Understand the entire process of product cost controlling and profit analysis*
6. *Configure financial statements and execution of reports*

UG 21 VE 015: HOSPITALITY MANAGEMENT

Module 1: Introduction to Hospitality

5 Hrs

Introduction to Hospitality Industry - Definition – Nature and scope – Historical evolution of Hospitality Industry - Essentials of hospitality Industry – components of hospitality Industry – concept of “Atithi Devo Bhavah”. – Home-away from Home - Sectors of hospitality industry -Food and Beverage - Travel & Tourism - Accommodation, Entertainment and Recreation

Module 2: Hospitality in Travel & Tourism

8 Hrs

Nature and Scope of Business – Role of the Travel professional - Needs and expectation of customer - desirable character – Finer points – Analysing customer expectation - Embracing the technology to serve customer – steps in delivering exceptional services – Responding to the upset customer.

Module 3: Hospitality in Accommodation Business

8 Hrs

Nature and scope of Business – Major Market segments – Luxury and Leisure – Hotel facilities and service Terminology – Handling of premium and luxury customers - Staff etiquette – Staff Coordination – Nature of work – Front office management – Reservation & Registration – Convenient check-in and check-out – Simplify Service with technology Handling difficult customers and their compliant – Meet and greet and escorting guest.

Module 4: Hospitality Food and Beverages

8 Hrs

Definition – Duties and responsibilities of staff - Types of F & B outlets and services– Concept restaurant – Customer expectation and needs – F & B counter services - Staff etiquette – Staff personal hygiene – Staff grooming – Coordination from table to kitchen – Table management.

Module 5: Hospitality in Entertainment and Recreation

8 Hrs

Entertainment and recreation overview Type of recreation –Recreational guest- Event management – responsibility of show host – Road show host - Comparing techniques and behaviour - Specific leisure and recreational management activities - Problems and discussion to leisure and recreational activities.

Module 6: Hospitality Etiquette

8 Hrs

Corporate communication skills – Active listening - Verbal non-verbal – body language – Telephone etiquette – Email etiquette – Greeting the customer – Exchange business cards - Table manners – Managing stress – Problem solving technique – Personality grooming – Case study.

UG 21 VE 016: AVIATION MANAGEMENT

COURSE OBJECTIVES

This course aims at developing the student's knowledge and skill about Aviation Management, including those related to Airline, Airport and other related bodies business operation within the industry.

Module 1: Introduction **5 Hrs**

Introduction to Aviation – Scope and growth - Component of Aviation – Aviation Terminology – History and growth of Aviation – Indian Aviation History – Future Trends

Module 2: Airline Management **8 Hrs**

Introduction to the Airline Industry – Airline terminology – Scheduled and Non-Scheduled flights – Low-cost Airlines - Effects of de-regulation – Open sky policies – Impacts of Airline Privatization – Airline business models - Airlines consolidation – Airline Alliance - Flight Scheduling and its challenges – Revenue Management – Pricing Technics – Fleet management – Types of ATC service for Airline navigation.

Module 3: Airport Management **8 Hrs**

Introduction to Airport and Terminals – Physical Layout of Airport – Airport partners and Stockholders – Airport as business centre - Impacts of Airport Privatization – Organisation structure – Airport facilities and Services – Flow management system – Staff management - Role and functions of Airport Manager – Role and functions of passenger ground services.

Module 4: Safety and Security **8 Hrs**

Importance of safety and security in Aviation – Impact of 9/11 terror attack - Passenger and Baggage security – Advance technology and equipment's for security – Unruly passengers' behaviours – Impact of 1999 Indian flight hijack – Anti-Hijack Policy in India – Cock-pick doors – Sky Marshalls – Role of Bureau of Civil Aviation Security (BCAS) and Transportation Security Administration System (TSA)

Module 5: Civil Aviation organisation and Law **8 Hrs**

IATA, ICAO roles and objectives - DGCA & AAI function and responsibilities - Paris, Tokyo, Cuba and Chicago Convention.

Module 6: Crew Management **8 Hrs**

Flight crew training and licencing – Crew scheduling – Types of crew scheduling – crew scheduling system – Airline crew pairing optimisation - Planning on minimum resources with maximum utilization (Reserve Crew, vacation).

COURSE OUTCOMES

After the completion of the course students will be able to:

1. Enumerate the global aviation Industry and its history, growth and scope
2. Explain Airline industry its types of operation and business structure.
3. Establish the functional actives of Airport, planning and coordination of various staff actives and their functions.
4. Illustrate the need of safety and security and other major polices and decision to encounter security services.
5. Establish the roles and functions of various associated organisation and law makers.
6. Develop an in-depth knowledge about crew training, licencing and crew planning effectively.

UG 21 VE 017: AIRFARE & TICKETING

COURSE OBJECTIVES

This course enables students with the knowledge of Air Fare and its calculations along with equipping them to use Galileo, Air Fare Ticketing software.

Module – 1: IATA Geography and Fare Level **7 Hrs.**

Physical World Geography - IATA Geography – IATA Areas and Sub-Areas – City, Country Code – Types of journey (One way, Round/Circle Trip, Round the world, Open Jaw) – Fare types and levels – Fare conversation and Rounding - Carrier Fares Selection (Revised)

Module - 2: Fare Calculation **12 Hrs.**

Introduction to fare formula– Understanding the parts of Journey– Transfer, Stopover, No Stopover - OW Journey Calculation– EMA, EMS, HIP – Round/Circle Trip -Special Fares – Interpreting Special/ Promotional fares rules and regulation.

Module - 3: E-Ticket and Reissuance **6Hrs.**

Understanding and reading E-Ticket and EMD (Specified and unspecified) – Consolidator Fares – Billing and Settlement Plan Procedures.

Module-4: Computer Reservation Tool **20Hrs.**

Computer Reservation System Galileo/Amadeus- Sign in/ Sign off- Decoding and Encoding- Time Table-Availability-Booking File/ PNR creation-Cancel an Itinerary-Special Service Requirement-Seat Request-Mileage Membership-Queues-Fares-Divide a booking file- understand and issuance and reading e-ticket – General booking entries on Room and Hotel.

Skill Development

(These activities are only indicative, the Faculty member can innovate)

- Prepare travel itinerary according to the travel sequences with various global indicators.
- Prepare a checklist of questions for passengers, for best fare pricing.
- Analyse and compare the different Airlines bundle fares to understand the pricing strategies.
- Create air booking and issue e-ticket in Galileo (GDS).
- Analyse the effects of airline pricing post covid 19.

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Use knowledge of world geography to sell destinations and plan efficient customer itineraries
2. Compute Fare keeping in view of Understanding the parts of Journey– Transfer, Stopover, No Stopover - OW Journey Calculation–

- EMA, EMS, HIP – Round/Circle Trip -Special Fares
3. Interpret the reading E-Ticket and EMD (Specified and unspecified)
– Consolidator Fares – Billing and Settlement Plan Procedures.
 4. Use the Computer Reservation System Galileo/Amadeus- Sign in/ Sign off- Decoding and Encoding to interpret the Booking File/PNR creation-Cancel an Itinerary and reading of E ticket.

Books for Reference

- ❖ *Passenger Air Traffic Edition 2020, IATA/org publishing*
- ❖ *IATA Foundation in Travel and Tourism version 5.17, 2020/IATA/org publishing*
- ❖ *Annual Ticketing Hand Book 2021/IATA/org publishing*
- ❖ *Author Doris S Davidoff & Philip G Davidoff, Airfares and Ticketing - Pearson - 3rd edition*

UG 21 VE 018: HOSPITAL MANAGEMENT

COURSE OBJECTIVES

This course enables students with

Module 1: Introduction

Definition and meaning of Health - Holistic approach to health, Basic information relating to health - Historical development of health care system in India - Definition and meaning of hospital - historical development of hospitals

- growth of hospital in India - The modern hospital - Present status of hospitals in India - Present State of Govt. hospital - National Health policy - Role of Hospital - benefits to the Health Care systems, Overview of Health Care delivery system.

Module 2: Hospital Planning

Guiding principles in planning hospital facilities & services - Planning the hospital building Stages in planning - Finance, Location, need assessment survey of community, factors determining site, legal requirements, design consideration, Project management & implementation - Planning the operational units, engineering, lighting - Organization of the hospital - Management structure Types of hospitals, Governing body, Hospital committee and hospital functionaries - Duties and responsibilities of various positions.

Module 3: Hospital Operational management

Management of Quality Assured services of professional service units of hospital - Function, location, flow chart of operation, design based on flow chart, organization - physical facilities and space requirements - statutory requirements, special features, problem situation - Staff requirement, Auxiliary requirements, Work load estimation, Documentation, Equipment & supplies. Emergency services.

Module 4: Health care management

Epidemiological basis for healthcare management - Management development - Development of professional management of Indian Hospitals - Management of Indian Hospitals - challenges & strategies - Modern Techniques of hospital management - Operation concept - use of models. Health services research & formalized managerial methods.

Module 5: Support and Utility Service Course

Mortuary Services Introduction – Role and Function – Planning Construction – Physical facilities – Equipment – Staffing – Policies and Procedures – Monitoring. West Bengal University of Technology - Medical Records Introduction – Definition – Purpose – Planning organizing and Staffing - Physical facilities – Processing of Records and their flow – Coding and Indexing – storage and Retrieval – Reports and Returns – Medico legal aspect of medical

Records - Pharmacy Services Introduction – Definition – Brief History – Role , function and types – Planning Consideration – Policies and Procedures – Management issues – Control and evaluation – Computerization in Pharmacy Services.

Module 6: Integrated Hospital and Patient Care Information System: Meaning – objectives – Need – Designs of HIS – Application of HIS – Stages of computerisation – HIS Design objectives and consideration - Conceptual Database Design – meaning of Patient Care information System – elements of Patient Care information System – Direct Care Process - Efficiency of care providers – Improved information access – in Patient Care.

COURSE OUTCOMES

After completion of the course the students will be able to:

Books for Reference

UG 21 VEC 019: GOODS AND SERVICES TAX

COURSE OBJECTIVE

This course aims to familiarize students with the provisions of the Goods and Services Tax Act, enabling them to accurately calculate goods and services tax liability in accordance with the legal framework.

Module 1: Introduction to GST

8 Hours

The concept of GST- The need for GST and the historical background of GST in India differences between the Direct and Indirect taxes, the basic features of Indirect taxes and the principal Indirect taxes in India, Taxes Subsumed not subsumed under GST. The framework under GST (Dual Model) and benefits from implementation of GST, the significant amendments made in Constitution. GST Council- composition Power and Functions.

Module 2: Procedure and levy under GST

12 Hours

Important definitions, Registration under GST based on Turnover Limits. Special provisions for Casual taxable persons and Non-resident taxable persons. Time of supply, place of supply and value of supply, Levy and collection of CGST/SGST/IGST, Computation of Transaction value (simple problems), Tax liability on Mixed and Composite supply, Composition levy, Reverse Charge Mechanism (RCM), Exemptions from Tax, Tax Invoice, E-Way bill, Provisions relating to E-Commerce.

Module 3: Input Tax Credit

10 Hours

Definition of: Input Goods, Input Services, Capital goods, Input on Capital Goods, Concept of Input tax credit Eligibility and conditions for taking ITC, Cross Utilization of ITC, Apportionment of credit and blocked credits, Availability of credit in special circumstances, availing and utilization of ITC. (Numerical Illustrations)

Module 4: Payment of Taxes and Filing of Returns

10 Hours

Definition of Returns, Concept of Electronic Credit Ledger, Electronic Cash Ledger, Brief introduction, and contents in- Returns for Outward supply (GSTR-1), Returns for Inward Supply (GSTR-2), Final Monthly Returns (GSTR-3), Annual Returns (GSTR-9) Mechanism of GST Network w.r.t Returns matching of invoices. GST Network: Structure, and Functions.

Module 5: GST and Technology

5 Hours

GST Network: Structure, Vision and Mission, Powers and Functions. Goods and Service Tax Suvidha Providers (GSP): Concept, Framework and Guidelines and architecture to integrate with GST system. GSP Eco system. (Theory only).

Skill Development

1. Explain CGST, SGST, and IGST Calculation Procedure.
2. Illustrate GST Suvidha Provider (GSP) Workflow in a Flowchart.
3. Create a GST Rate Chart Displaying Different Rates.
4. Generate Payment Challans for Duty Payment.
5. Construct a Tax Invoice as per GST Act.
6. Diagram GSTN Structure and Operational Mechanism.
7. Compile a List of Exempted Goods/Services under GST.
8. Design an Organizational Chart for the GST Council.

9. Depict the GST Scheme in a Chart.
10. Calculate Taxable Value and Liability (with fictional figures) for CGST, SGST, and IGST.
11. Outline the Registration Procedure.
12. Detail the Monthly Returns Submission Process.

COURSE OUTCOMES

After completion of the course the students will be able to

1. Understand and differentiate GST's concept, historical background, and its impact on the taxation system. Analyze the subsumed and non-subsumed taxes, and evaluate the role and composition of the GST Council.
2. Compute transaction values, assess tax liability, and comprehend exemptions. Gain practical knowledge of GST registration, E-Way bill, and provisions for E-Commerce transactions.
3. Identify and categorize Input Goods, Services, and Capital goods. Solve numerical problems on ITC cross-utilization, blocked credits, and grasp conditions for availing and utilizing ITC.
4. Acquire the ability to prepare diverse GST returns and understand the role of the GST Network in returns matching. Define and use Electronic Credit and Cash Ledgers.
5. Understand the structure and functions of the GST Network, the concept of Goods and Service Tax Suvidha Providers (GSP) and their role in integrating with the GST system.

BOOKS FOR REFERENCE

1. Mohan, CA. Rajat. (2020). *Guide to GST*, Bharat Law House Pvt. Ltd.
2. Gupta, N.K. & Batia, Sunnania. (2015). *Goods & Services Tax – Indian Journey*. Barat's Publication.
3. Agrawal, Dr. Sanjiv & Malhotra, CA. Sanjeev. (2017). *Goods & Services Tax*, Bloomsbury, India
4. *Taxmann's GST Acts with Rules & Forms*, Taxmann Publication (2020)
5. *Student's Guide to Income Tax Including GST*, Taxmann; 65th Edition (2023-2024), **Dr. Vinod Singhania and Dr. Monica Singhania**
6. *GST Guide For Students: Making GST – Good & Simple Tax*, Neelam Book House (2020), CA Vivek Kr. Agrawal
7. *GST Ready Reckoner*, Taxmann 16th Edition 2021, V.S. Datey

UG 21 VEC 020: APPLICATION OF ANALYTICS IN BUSINESS

COURSE OBJECTIVES

The course aims to equip students with an understanding of the data driven business landscape and its effects on its operational departments and systems. It will enable students to develop practical skills in data analytics, visualization, and relevant technologies, enabling them to engage effectively in the modern business landscape.

Module 1: Impact of Technology in Business **5 Hrs**

Importance of the new technologies and its Impact on the Financial (Banking Insurance, Capital and Money Markets), Accounting, and Taxation systems. - E-Payments and its enabling technologies. - Digitization of Financial Services – Fintech & Funds - Crowd Funding – P2P and Marketplace Lending – Impact on Sales and Operational Processes

Module 2: Data in Business and its Role in Analytics **10 Hrs**

Role of data in the current business environment - Data, Metadata & Differential Privacy - Data Regulation – API economy - Digital Identity - Methods of Data protection- Different types of Data – Systems used in Analytics – Types of Analytics –Analytics in business – Prescriptive and Predictive Analytics, ETL (Extract, Transform and Load), Automation, Process mining and Optimisation - Why Analytics can fail - Case Studies

Module 3: Introduction & Practical application of Data Analytics - Visualization **15 Hrs**

Importance of Visualization in Power BI – Loading data into Power BI – Developing Basic reports – Slicers and page filters – Basic usage of standard formulae and data modelling – Practical aspects of Power BI - Loading more complex datasets.

Module 4: Intermediate Visualizations using Power BI **15 Hours**

Data Modelling – Advanced Formulae – Advanced Visualisations. - Business Case studies

Skill Development

1. Analyze and discuss a real-life case study highlighting digital finance adoption.
2. Research and compile a report on the history and evolution of data regulation.
3. Explore digital identity platforms and present their advantages and potential concerns.
4. Simulate invoice discounting processes in a digital environment.
5. Create basic reports using Power BI, showcasing various data visualization techniques.
6. Apply slicers and page filters to manipulate data visualizations.
7. Create custom measures and parameters for customized analysis.
8. Develop data relationships for enhanced analysis.

9. Create advanced visualizations to represent complex data.

COURSE OUTCOMES

After completion of the course the students will be able to

1. Understand Industry 4.0's evolution, its technological impact, advantages, and its relevance in finance, accounting, and taxation. Understand E-Commerce concepts, types, and E-Payment technologies. Analyze Indian digital finance context through case
2. Differentiate data types, explore analytics systems, and analyze their advantages, disadvantages, and applications. Recognize analytics failures, data privacy, and GDPR implications.
3. Recognize visualization importance, load data into Power BI, develop basic reports, and use standard formulae for data modeling.
4. Handle complex datasets, model data, create advanced visualizations, and understand Power BI's publishing process.

BOOKS FOR REFERENCE

Essential References:

- *Chishti, S., & Barberis, J. The Fintech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries. Wiley Publication latest Edition.*

Recommended References:

1. *Solove, D. J. Understanding Privacy. Harvard University Press Latest Edition.*
2. *Fawcett, T. Data Science for Business. O'Reilly; Latest Edition.*
3. *Foreman, J. W. Data Smart: Using Data Science to Transform Information into Insight. Wiley*
4. *Chishti, S. The Legal Tech Book. Wiley I Edition 2020.*
5. *U.Dinesh Kumar, Business Analytics: The Science of Data-Driven Decision Making, Wiley 2021*
6. *Sanjiv Jaggia, Business Analytics: Communicating with Numbers McGraw Hill, 2nd Edition, May 2023*
7. *Dennis Charles, Power BI for Beginners-Uncover you Data Insights, July 2023*
8. *Chandransh Sinha, Mastering Power BI, BPB Publications, 2021*

UG 21 VEC 021: STOCK MARKET

COURSE OBJECTIVE

This course enables students with the basic understanding of the stock markets and its functioning along with equipping them with the knowledge of trading and also to choose stocks using fundamental and technical analyses.

Module 1: Introduction to Financial System

6 Hrs

Overview of Financial System: Institutions, Markets, Instruments & Services – RBI & SEBI – Capital Market – Primary Market – Types of Primary Issue – Classification of Financial Instruments – Categories of Financial Services – Credit Rating

Module 2: Secondary Market

6 Hrs

Meaning – Primary vs. Secondary Market – Depositories – Depository Participants – Brokers – Investors – Speculators – Stock Exchanges – Stock Market Indices – Listing of Companies

Module 3: Stock Trading

5 Hrs

Types of Stocks – Stock Prices – Demat Account – Trading Account – Procedure for Trading – Types of Orders – Clearing & Settlement – Types of Stock Trading Strategies

Module 4: Fundamental Analysis

10 Hrs

Introduction – Factors considered for Fundamental Analysis: Economy, Industry & Company – Case-study Analysis using Screener (or any other platform)

Module 5: Technical Analysis

10 Hrs

Introduction – Dow Theory – Chart Types – Candle Stick Patterns – Support & Resistance – Technical Indicators: MACD, EMA, ROC, RSI & Stochastic Oscillators – Choosing Stocks using Technical Tools

Module 6: Derivatives Trading

8 Hrs

Introduction – Features of a Financial Derivative – Types of Financial Derivatives – Uses of Derivatives – Critiques of Derivatives – Futures Contracts: Features - Classification of Futures Contracts – Trading Mechanism – Options – Moneyness of the Options – Intrinsic Value and Time Value - Pay-off for Options

Skill Development

1. Investigate and present various aspects of capital markets, primary markets, IPO types, procedures, and participants.
2. Engage in a virtual stock trading simulation, applying knowledge about stock exchanges, stock market indices, and types of financial instruments.
3. Participate in mock trading sessions to simulate real-life trading experiences, practicing different types of orders and their execution.
4. Engage in hands-on exercises related to clearing and settlement processes, ensuring understanding of trade finalization.
5. Analyse real-world charts applying Dow Theory, understanding various chart types and identifying patterns.
6. Practice identifying candlestick patterns like doji, hammer, etc., and learn their implications.

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Explain the four major components of the Indian Financial System comprehensively.
2. Describe the various elements of stock market and explain its functions.
3. Demonstrate proficiency in trading procedures, order types, clearing and settlement processes.
4. Appraise stocks based on fundamental analysis using Screener or any other platform.
5. Choose stocks based on chart patterns and key technical indicators.
6. Differentiate various derivative instruments along with trading mechanism.

BOOKS FOR REFERENCE

- *M.Y. Khan: Financial Markets and Institutions*
- *Promod Mantravadi (Ed.): Financial Services, ICFAI. Venkatesh T R :Indian Financial Market an Introduction*
- *Avadhani, Security Analysis & Portfolio Management, 12th Revised Edition, Himalaya Publishing House, 2020*
- *Punithavathy Pandian, Security Analysis & Portfolio Management, 5th Edition, Vikas Publishing House, 2013*
- *Murphy, J. J. (2023). Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications. New York Institute of Finance.*
- *James Chen, Essentials of Technical Analysis for Financial Markets; John Wiley & Sons; 2010*
- *Lita Epstein & Gray D. Roze; Trading for Dummies; 5th Edition; John Wiley & Sons; 2023*
- *Kumar, S. S. S; Financial Derivatives; PHI Learning Pvt. Ltd; 2007*

UG 24 VE 022: DIGITAL MARKETING

COURSE OBJECTIVES

The course aims to acquaint learners with the concepts of different Digital marketing channels, media options and marketing process of Digital Marketing.

Module 1 - Introduction to Digital Marketing

8 Hrs

Introduction to marketing in the digital environment- types of web presence- common ecommerce business models (B2B, B2C, C2C, B2G) – History of digital marketing Digital marketing channels and classifications - Digital Marketing Process- Digital media options-online-fulfilment options- Regulations and Code of Practice in Digital Marketing in India.

Module 2 - Digital Marketing Research

8 Hrs

Audience profiling and segmentation-Internet usage patterns -Post Internet consumer behaviour and understanding buyer behaviour online-pillars of direct marketing Online research and behaviour tracking methods- Behavioural Targeting-Online surveys- Blog mining- Data mining- Building customer profiles- Integrating online and offline strategies.

Module 3 - Search Engine Optimization and Marketing

14 Hrs

Introduction and Meaning - Keywords - Different types of keywords – Google keyword planner tool - Keywords research process –Keywords mix -Google Adwords and Google analytics - Search and display on search engines- Pricing models online Page rankings- Search Engine Optimization (SEO) tools- Search Engine Marketing (SEM) - Paid versus Organic Search- Landing pages- Importance of conversion analysis.

Module 4 - Tools of Digital Marketing

15 Hrs

Email Advertising: Creating email campaign, Opt-in and Bulk emailing, Challenges faced in sending bulk emails , Types of email marketing -Online Display Advertising Web Marketing- Influencers - Social Media Marketing (SMM)- Display Advertising – Contextual advertising -Pay Per Click (PPC)- Social Media Advertising: Creating a Page, Social media dimensions, Account engagement-Social Platforms: Facebook, X(Twitter), Instagram, LinkedIn and YouTube advertising –Mobile Marketing: Advertising on mobile (App and Web),SMS marketing, Measurement and Analytics.

Skill Development

(These activities are only indicative, the Faculty member can innovate)

1. Create an idea for a social media app and explain your unique digital marketing strategy
2. Explain how you would help a local start-up company promote their business using google.
3. Students have to create various creative campaigns on all social media platforms and measure the effectiveness of each campaign.
4. Module 3 and 4 will be practical oriented approach.

COURSE OUTCOMES

After completion of the course the students will be able to:

1. Compare and contrast the different Digital marketing channels, media options and marketing process of Digital Marketing and Traditional Marketing.
2. Use a Digital marketing Research to evaluate the buying behavior of consumers online.
3. Plan for search engines optimization techniques in digital marketing for a wide accessibility of vast consumers.
4. Utilize a set tools of Digital Media Advertising for digital marketing of different platforms of both online and offline Business.

Book for Reference

- Deepak Bansal, A Complete Guide To Search Engine Optimization, B.R Publishing Corporation, Revised Edition.
- Grienstein and Feinman, E-commerce –Security, Risk Management and Control McGraw-Hill Inc.,US (1 January 2000)
- Strauss. J and Frost R, “E- Marketing”, Prentice Hall; 7th edition (July 21, 2013)
- Ramsey , Seven Guidelines for Achieving ROI from Social Media, eMarketer, 2010
- Godfrey Parkin, Digital Marketing: Strategies for Online Success New Holland Publishers Ltd, 2009
- Damian Ryan , Understanding Digital Marketing : Marketing Strategies for Engaging the Digital Generation, Kogan Page, Revised Edition,
- Jonah Berger, Contagious Why Things Catch On, Simon & Schuster,2013

COURSE OBJECTIVE:

To provide students with a comprehensive understanding of database management systems (DBMS) tailored for Human Resources (HR) functions, covering data essentials, database models, relational database concepts, practical SQL querying skills, security measures, and contrasting NoSQL database features with traditional SQL, to streamline HR processes effectively.

Module 1: Introduction to Database Management (HR Perspective) 7 hours

Introduction to Data, Database, Database Management System, HR Data Management, Characteristics of HR DBMS, Introduction to Data Warehousing, Data Mining, Data Abstraction in HR– Logical, Conceptual & External, Data Independence in HR DBMS - Physical and Logical Independence, Client-Server Architecture, HR DBMS Architecture-1st Tier, 2nd Tier and 3rd Tier.

Module 2: HR Database Models and Implementation 8 hours

Introduction, E-R model, Relational model, Network model and Hierarchical model, Entity-Relationship (E-R) Model for HR using E-R Diagrams- Notation used in E-R Model- Relationships and Relationship-Types- Cardinalities.

Module 3: HR Relational Database Management 10 hours

Understanding HR Relational Databases, Attributes in HR Databases- Types of **Attributes**- Simple, Composite, Single-Valued, Multi-Valued, Derived, Complex, **Keys**- Primary Key, Super Key, Candidate Key, Alternate Key, Foreign Key, Composite Key, Unique Key, ACID Properties and Armstrong Axioms, Normalization in HR Databases: 1NF, 2NF, 3NF, and BCNF.

Module 4: SQL Queries in HR Operations 10 hours

Query, Sub-Query, Nested Query, Joins Natural, Inner, outer join: SQL Data Definition and Data Types, Basic Queries in SQL CREATE statement, Specifying Constraints in SQL, Basic Retrieval Queries in SQL – SELECT statement, INSERT, DELETE, and UPDATE Statements in SQL, GRANT and REVOKE statements, Introduction and overview of Security Issues and Control Measures in HR Database.

Module 5: SQL Commands in HR Operations 10 hours

SQL Commands for HR Management- Data Definition Language (DDL) commands, Data Manipulation Language (DML), Data Control Language (DCL) commands, Data Query Language(DQL) commands, Transaction Control (TCL) Commands, Introduction of NoSQL, Classification, Features, Working of NoSQL, Advantages, Disadvantages, Differences between SQL and NoSQL.

Skill Development: SQL LAB

1. Design, develop, and implement the specified queries for the following problems using Oracle, MySQL, MS SQL Server, or any other DBMS under LINUX/Windows environment.
2. Create Schema and insert at least 5 records for each table. Add appropriate database constraints.
3. Perform the following:
 - Creating a Database,
 - Viewing all databases,
 - Viewing all Tables in a Database,
 - Creating Tables (With and Without Constraints),
 - Delete Table
 - Rename Table.
4. Write SQL Queries involving:
 - Date Functions,
 - String Functions and
 - Math Functions.
5. Create a table EMPLOYEE to store information about the Employee Management System with fields ID (Primary Key), Name, Department, Position, Salary, Location and populate the EMPLOYEE table with few rows
 - SQL query to look at the EMPLOYEE table in undefined order.
 - SQL query to select employees aged above 35
 - SQL query to select only ID, NAME, and DEPARTMENT columns
 - SQL query to select only ID, NAME, and DEPARTMENT columns where Salary is greater than 60000.
6. Create a table EMPLOYEE to store information about the Employee Management System with fields ID (Primary Key), Name, Department, Position, Salary, Location. Duplicate ID fields are not allowed and populate the EMPLOYEE table with few rows.
7. Create another table called PERFORMANCE to store performance metrics of employees, such as productivity and attendance.
 - Creating and Populating PERFORMANCE Table.
 - SQL query to look at the PERFORMANCE table in undefined order.
 - SQL query to look at the PERFORMANCE table, picking up location information by joining with table EMPLOYEE on the Employee_ID column
 - SQL query to look at the PERFORMANCE table ordered by month and greatest performance, with columns rearranged
8. Consider a schema for a Payroll Database:
EMPLOYEE(Employee_ID, Employee_Name, Department, Position, Salary, Hire_Date)
PAYMENT(Employee_ID, Payment_Date, Amount)
 - Draw the E-R Diagram for the Payroll Database.

- Write an SQL query to find the total amount paid to each employee and the highest amount received by any employee. Sort the result by employee name. (Use Inner Join)
- Write an SQL query to retrieve all the employees and any payments they have received. (Use left Join)
- Write an SQL query to retrieve all the payment records and the corresponding employee details (Use right outer join)
- Write an SQL query to retrieve all the payment records and all the employees, showing NULL for employees without payments and vice versa (Use Full join)

9. Consider the following schema for a Library Database:

BOOK (Book_id, Title, Publisher_Name, Pub_Year)

BOOK_AUTHORS (Book_id, Author_Name)

PUBLISHER (Publisher_Name , Address, Phone)

BOOK_COPIES (Book_id, Branch_id, No-of_Copies)

BOOK_LENDING (Book_id, Branch_id, Card_No, Date_Out, Due_Date)

LIBRARY_BRANCH (Branch_id, Branch_Name, Address).

- Draw the E-R Diagram for the Library database.
- Write SQL query to Retrieve details of all books in the library: id, title, name of publisher, authors, number of copies in each branch.
- Write an SQL query to compute the total number of books based on publisher name order by year.

COURSE OUTCOMES:

After completion of the course the students will be able to:

- Understand how data and databases are crucial for managing HR tasks effectively.
- Learn different types of databases and how they're used in HR settings.
- Grasp the basics of organizing HR data in databases, like keys and attributes.
- Master practical skills in using SQL to manage HR data securely.
- Explore how NoSQL databases differ from traditional ones and their role in HR.

References:

- “Ramez Elmasri and Shamkant B. Navathe, “Fundamentals of Database Systems”, Revised Edition, Pearson Education.
- Abrahamsi. Silberschatz, Henry. F. Korth, S. Sudarshan, “Database System Concepts”, Revised Edition, McGraw Hill.
- C.J.Date, “Introduction to Database Systems”, Revised Edition, Addison Wesley, 2003.
- Karate, “Introduction to Database Management System”, Pearson India.

UG 24 VE 024: DATABASE MANAGEMENT SYSTEM – CRM PERSPECTIVE

COURSE OBJECTIVES

CRM-DBMS offers a comprehensive exploration of database management systems (DBMS) tailored specifically for Customer Relationship Management (CRM) functions. Students will gain insights into the core principles, methodologies, and technologies essential for effective CRM database management. Key topics include data structuring, schema design, security protocols, and the integration of database management principles to enhance CRM operations efficiently.

Module 1: Introduction to Database Management (CRM Perspective) 7 hrs

Introduction to Data, Database, Database Management System, CRM Data Management, Characteristics of CRM DBMS, Introduction to Data Warehousing, Data Mining, Data Abstraction in CRM – Logical, Conceptual & External, Data Independence in CRM DBMS - Physical and Logical Independence, Client-Server Architecture, CRM DBMS Architecture- 1st Tier, 2nd Tier and 3rd Tier.

Module 2: CRM Database Models and Implementation 8 hrs

Introduction, E-R model, Relational model, Network model and Hierarchical model, Entity-Relationship (E-R) Model for CRM using E-R Diagrams- Notation used in E-R Model- Relationships and Relationship-Types- Cardinalities.

Module 3: CRM Relational Database Management 10 hrs

Understanding CRM Relational Databases, Attributes in CRM Databases- Types of Attributes- Simple, Composite, Single-Valued, Multi-Valued, Derived, Complex, Keys- Primary Key, Super Key, Candidate Key, Alternate Key, Foreign Key, Composite Key, Unique Key, ACID Properties and Armstrong Axioms, Normalization in CRM Databases: 1NF, 2NF, 3NF, and BCNF

Module 4: SQL Queries in CRM Operations 10 hrs

Query, Sub-Query, Nested Query, Joins Natural, Inner, outer join: SQL Data Definition and Data Types, Basic Queries in SQL CREATE statement, Specifying Constraints in SQL, Basic Retrieval Queries in SQL – SELECT statement, INSERT, DELETE, and UPDATE Statements in SQL, GRANT and REVOKE statements, Introduction and overview of Security Issues and Control Measures in HR Database.

Module 5: SQL Commands and Queries for CRM 10 hrs

SQL Commands for CRM Management- Data Definition Language (DDL) commands, Data Manipulation Language (DML), Data Control Language (DCL) commands, Data Query Language (DQL) commands, Transaction Control (TCL) Commands, Introduction of NoSQL, Classification, Features, Working of NoSQL, Advantages, Disadvantages, Differences between SQL and NoSQL,

Learning Objectives:

- Learn the essentials of data, databases, and their role in CRM.
- Gain expertise in various database models and their implementation in CRM contexts.
- Explore relational database concepts, including keys, attributes, and normalization for CRM data.
- Acquire practical SQL querying skills tailored for CRM database operations

and management while exploring the security issues and control measures.

- Understand the use of NoSQL databases in CRM, contrasting their features with traditional SQL.

Skill Development: SQL LAB

1. Design, develop, and implement the specified queries for the following problems using Oracle, MySQL, MS SQL Server, or any other DBMS under LINUX/Windows environment.

2. Create Schema and insert at least 5 records for each table. Add appropriate database constraints.

3. Perform the following:

- Creating a Database,
- Viewing all databases,
- Viewing all Tables in a Database,
- Creating Tables (With and Without Constraints),
- Delete Table
- Rename Table.

4. Write SQL Queries involving:

- Date Functions,
- String Functions and
- Math Functions.

5. Consider the following schema for a Library

Database: BOOK (Book_id, Title, Publisher_Name,

Pub_Year) BOOK_AUTHORS (Book_id, Author_Name)

PUBLISHER (Publisher_Name , Address, Phone)

BOOK_COPIES (Book_id, Branch_id, No-of_Copies)

BOOK_LENDING (Book_id, Branch_id, Card_No, Date_Out, Due_Date)

LIBRARY_BRANCH (Branch_id, Branch_Name, Address).

- Draw the E-R Diagram for the Library database.

- Write SQL query to Retrieve details of all books in the library: id, title, name of publisher, authors, number of copies in each branch.

- Write an SQL query to compute the total number of books based on publisher name order by year.

6. Create a table ORDER to store information about the Order Management System with fields Order_Id (Primary Key), Name, Product, Item_type, Cost, Delivery_time, Location and populate the ORDER table with few rows

- SQL query to look at the ORDER table in undefined order.

- SQL query to select orders with cost above 500

- SQL query to select only ORDER_ID, NAME, and ITEM_TYPE columns

- SQL query to select only ORDER_ID, NAME, and ITEM_TYPE columns where Cost is greater than 1000

7. Create a table ORDER to store information about the Order Management System with fields ORDER_ID (Primary Key), Name, Product, Item_type, Cost, Location. Duplicate ID fields are not allowed and populate the ORDER table with few rows.250

8. Create another table called FEEDBACK to store performance metrics of the Company, such as Delivery on-time and Product Condition.

- Creating and Populating FEEDBACK Table:

- SQL query to look at the FEEDBACK table in undefined order:

- SQL query to look at the FEEDBACK table, picking up DELIVERY_TIME information by joining with table ORDER on the

ORDER_ID column

■ SQL query to look at the FEEDBACK table ordered by Item_types and expensive cost, with columns rearranged

9. Consider a schema for a Customer Satisfaction Database:

- a. Customer_ID (INT PRIMARY KEY)
- b. Customer_Name (VARCHAR(255))
- c. Email (VARCHAR(255))
- d. Order_ID (INT PRIMARY KEY)
- e. Customer_ID (INT FOREIGN KEY REFERENCES Customer(Customer_ID))
- f. Order_Date (DATE)
- g. Order_Amount (DECIMAL(10,2))
- h. Survey_ID (INT PRIMARY KEY)
- i. Order_ID (INT FOREIGN KEY REFERENCES Order(Order_ID))
- k. Satisfaction_Score (INT)

10. Feedback (TEXT)

■ Draw the E-R Diagram for the Customer Satisfaction Database.

■ Write SQL query to Retrieve details of all Customers in the Database. Id, Name, Email, Order_ID etc. (Use Left Join)

■ Retrieve all order details and corresponding customer information (Right Outer Join)

■ Retrieve all customer and order data, including those without orders or surveys (Full Join)

References

■ "Ramez Elmasri and Shamkant B. Navathe, "Fundamentals of Database Systems", 5th Edition, Pearson Education, 2007.

■ Abrahamsi. Silberschatz, Henry. F. Korth, S. Sudarshan, "Database System Concepts", 6th Edition, McGraw Hill, 2012.

■ C.J.Date, "Introduction to Database Systems", Eight Edition, Addison Wesley, 2003.

■ Karate, "Introduction to Database Management System", Pearson India, 2004

**VOCATIONAL ENHANCEMENT COURSE – ELECTIVE
SPECIFIC**

VOCATIONAL ENHANCEMENT COURSE		
ELECTIVE 7 - BUSINESS ANALYTICS		
VEC-1	UG 24 VEBA 501	Data Visualization and Storytelling
VEC-2	UG 24 VECBA 601	AI-ML and its Business Applications
ELECTIVE 8 - INTERNATIONAL PUBLIC ACCOUNTING		
VEC-1	UG 24 VEIPA 501	International Auditing & Attestation
VEC-2	UG 24 VEIPA 601	International Tax and Regulation
ELECTIVE 9 - INSURANCE		
VEC - 1	UG 24 VEIN 501	Practice of General Insurance
VEC - 2	UG 24 VEIN 601	Practice of Life Insurance

SEMESTER V
ELECTIVE – VII: BUSINESS ANALYTICS
UG 24 VECBA 501: DATA VISUALIZATION AND STORYTELLING

COURSE OBJECTIVES:

To help students use Power BI, a powerful business intelligence tool, to visualize and share insights from data.

Module 1: Telling Stories with Data **6 Hours.**

Telling stories with data - What to look for in a case study approach - Handling data - Gathering data, Formatting data - Tools for visualizing data - Understanding Key Concepts in Business Intelligence - Self-Service Business Intelligence (SSBI)

Module 2: Data Transformation for Power BI **6 Hours.**

Different Data Sources in Power BI Desktop - Loading Data into Power BI – Power BI Interface - Data Cleaning using Power BI query editor - Transform, Clean, Shape, and Model Data – Create and Edit Data Relationship – Working with Cross Filter

Module 3: DAX vs M Query **9 Hours.**

Introduction to DAX - Data Types in DAX - DAX Calculations - Measures in DAX - DAX Syntax – Functions and Operators in DAX – DAX Tables and Filters

Module 4: Data Visualization with Power BI **12 Hours.**

Introduction to Visuals In Power BI - Visualization Charts in Power BI - Matrixes and Tables - Slicers and Map Visualizations - Gauges and Single Number Cards - Modifying Colours in Charts And Visuals - Formatting Charts and Visuals - Shapes, Text Boxes, and Images - Custom Visuals - Page Layout and Formatting - Bookmarks and Selection Pane - KPI Visuals - Ordering Elements - Grouping and Binning - Using Parameters in Power BI

Module 5: Business Visualization using Tableau **6 Hours.**

Importing data, Shaping and Transforming Data with Business Calculations - Working with Tableau: Bringing in and Analysing Data- Understanding data connections, Visualizing Data, Data display options, Adding worksheets, Creating Dashboards: building stories with data, creating calculations, Publishing and sharing dashboards.

Module 6: Interactive Visualization with Tableau **6 Hours.**

Filtering Dashboard Parameters, Filtering Data at Views, Creating And Managing Category Hierarchies, Interacting With Parameters, Data Sets, Time Series And Predictive Analytics, Ask Data And Explain Data Features

Skill Development: (These are indicative activities; innovation is always welcome)

1. Students could be assigned a data collection activity, from which they would acquire a real-time data that could be subjected to ETL processing.
2. Students can explore various data platforms from which they download free datasets and develop dashboards.

3. Students can collect data from different stock exchange platforms to collate and model the profitable business and create visuals.
4. Students can try publishing their reports with their peer members and add, develop, comment, or narrate the pages.

COURSE OUTCOMES:

- Learners will become proficient in creating stunning visuals, that support quick and accurate decision-making.
- Learners can develop profitable business models, backed by dynamic dataflow.
- Learners can create interactive dashboards that could be presented in business meetings.

Books for Reference:

- Tableau for Dummies; Molly Monsey, Paul Sochan; ISBN: 978-1-119-13483-1
- Data Visualization For Dummies, Mico Yuk, Stephanie Diamond; ISBN: 978-1-118-50292- 1
- Storytelling with Data: A Data Visualization Guide for Business Professionals by Cole Nussbaumer
- Microsoft Power BI Dashboards Step by Step| First Edition| By pearson | Errin O'Connor

SEMESTER VI
ELECTIVE – VII: BUSINESS ANALYTICS
UG 24 VECBA 601: AI-ML AND ITS BUSINESS APPLICATIONS

COURSE OBJECTIVES

To introduce students to an overview of Artificial Intelligence and its components, supervised and unsupervised machine learning techniques and algorithms.

Module 1: Introduction to AI **5 Hours.**

What is AI, Components of AI, Introduction to ML, Types of ML, Influence of AI-ML on Business, how to get started on AI, A typical AI & ML process, Introduction to deep learning

Module 2: Supervised Machine Learning Technique **10 Hours.**

Supervised Machine Learning – Basics of linear regression - Working with simple linear regression - Multiple regression - Model building - Non-linear regression - Line estimation - Non-linear models - Line estimation - Application for regression - Logistic regression models - Principles of Decision trees - Building Decision trees - Cart, C5.0 and CHAID trees - Prediction by decision trees - Applications of Decision Trees

Module 3: Categorical Supervised Machine Learning Techniques **10 Hours.**

Introduction to Bayesian theorem - Bayesian classification models - Application of Bayesian models - Introduction to Support vector Machines - SVM algorithms - Linear support vector machines - Kernel function - Prediction using SVM models

Module 4: Segmentation using Clustering **10 Hours.**

Introduction to clustering - Agglomerative Hierarchical clustering - Clustering by similarity aggregation - K- Means clustering - Applications of clustering.

Module 5: Random Forest & Boosting **10 Hours.**

Ensemble learning and Models - Bagging and Random forest - boosting algorithm – Adaboost - Gradient boosting machines and interpretation.

Skill Development:

1. Students must compare different algorithms available for different problems.
2. Selection of appropriate method to solve the given problem to be identified and implemented
3. Development of a project work on a given dataset to implement suitable algorithm and compare results with all other platforms and technologies.
4. Analysis the available methods and identify the best method to any problem given.

COURSE OUTCOMES:

1. Understand Artificial Intelligence, its components and influence on business.
2. Develop an understanding of the role of analytics in finance especially the forecasting techniques, predictive analytics and leveraging optimization techniques and apply the same.
3. Develop an understanding of unsupervised Machine Learning concepts.

Books for Reference:

- Data Science and Machine Learning using Python by Dr Reema Thareja, McGraw Hill
- Machine Learning with Python for Everyone, by Mark Fenner, ISBN: 978-9353944902
- Machine Learning, 1e, by Saikat Dutt, Subramanian Chandramouli, Amit Kumar Das
| Pearson publications

Skill Development:

(These activities are only indicative, the Faculty member can innovate)

1. Preparation of an audit plan for audit of an issuer entity.
2. Study SOP for a company's core processes and prepare a risk-control matrix.
3. Study an issuer's integrated audit report and present the key highlights.
4. Engage in group discussion about the performance of non-attest services to audit clients.
Discuss the (i) type of non-attest services, (ii) restrictions placed by SOX Act 2002, and (iii) list arguments for and against such restrictions.
5. Evaluate the test of controls generally performed by an auditor while auditing financial statements. And explain how the scopes of these tests are different when the auditor is performing an integrated audit.
6. Present a report on audit data analytics tools and techniques generally used by auditors.

COURSE OUTCOME:

Students will be able to

1. Achieve knowledge and skills that a public accountant must demonstrate when performing audits of issuer and non-issuer entities.
2. Achieve knowledge and skills required by a public accountant to establish the overall audit strategy and develop an audit plan.
3. Achieve knowledge and skills required by a public accountant to understand an entity and its environment (including its internal controls), and assess the risks of material misstatement.
4. Achieve knowledge and skills required by a public accountant to obtain sufficient appropriate audit evidence by performing audit procedures to afford a reasonable basis for an opinion regarding the financial statements under audit.
5. Achieve knowledge and skills required by a public accountant to form an audit opinion and report on financial statements.
6. Achieve knowledge and skills that a public accountant must demonstrate when performing compilation engagements, review engagements and attestation engagements.

Books for Reference:

- Miles CPA Review Concept Book: Auditing and Attestation, Miles Education
- Wiley CPA Excel Exam Review Course Study Guide: Auditing and Attestation, John Wiley & Sons
- Wiley Practitioner's Guide to GAAS: Covering all SAS, SSAE's, SSARS, PCAOB, Auditing Standards, and Interpretations, Joanne M. Flood, John Wiley & Sons
- Auditing: A Risk Based-Approach to Conducting a Quality Audit, Karla M Johnstone, Audrey A. Gramling and Larry E. Rittenberg, Cengage Learning of Auditing & Other Assurance Services, Ray Whittington and Kurt Pany, McGraw Hill
- Auditing & Assurance Services: A Systematic Approach, William F Messier Jr, Steven M. Glover and Douglas F. Prawitt, McGraw Hill

SEMESTER VI
ELECTIVE – VIII: INTERNATIONAL PUBLIC ACCOUNTING
UG 24 VECIPA 601: INTERNATIONAL TAX AND REGULATION

COURSE OBJECTIVE

Students should be able to understand federal income tax provisions applicable to individuals including gross income, deductions, tax calculations, alternative minimum tax, other taxes and tax credits, federal income tax provisions applicable to C-Corporations, S-Corporations, partnerships, estates & trusts, and tax-exempt organizations.

Module 1: Individual Taxation **8 Hrs.**

Individual Income Tax Return - Filing Status – Cash basis and Accrual basis - Gross Income - Wages, Salaries, Bonus, Commission, Fees & Tips – Interest & Dividend Income – Business Income – Capital Gains & Losses – Passive Income – Farming Income
– Deductions to AGI – Deductions from AGI - Calculating Tax - Tax Credits – Alternative Minimum Taxes – Other Taxes – Estimated Tax penalty

Module 2: Property Transactions & Depreciation **6 Hrs.**

Capital Gains & Losses - Gains & Losses from Sale of Long-term Business Property - Depreciation & Amortization

Module 3 Taxation of C-Corporations **8 Hrs.**

Formation – Income Tax Return – Income – Deductions – Reconciliation of Taxable Income with books – Calculating Tax – Corporate Earnings & Distributions – Corporate Liquidation & Reorganizations

Module 4: Taxation of S-Corporations **7 Hrs.**

Eligibility criteria – Income Tax Return – Shareholder basis – Earnings and Distribution – Termination of Election

Module 5: Taxation of Other Entities **8 Hrs.**

Partnerships: Formation – Income Tax Return – Partner basis – Partnership Distributions – Sale of Partnership Interest by a Partner – Termination of Partnership Estate, Trust & Gift Taxation: Estate and Trust Fiduciary Income Tax Return – Estate Tax Return – Gift Tax Return – Generation-skipping transfer Tax
Tax Exempt Organizations: Formation – Income Tax Return

Module 6: Statutory Regulations, Accountant Responsibilities, Business Structures
8 Hrs.

Securities Act of 1933 – Securities Exchange Act of 1934 – Other Federal Security Regulations - Accountant Common Law Liabilities – Accountant Statutory Liabilities – Accountant Liabilities for Privileged Information – Accountant Criminal Liabilities – Employment Regulations – Environmental Regulations – Antitrust Regulations - Business Structures

Skill Development:

(These activities are only indicative; the Faculty member can innovate)

1. Review various schedules of Form 1040 (Individual Income Tax return).
2. Analyze various tax planning method and techniques available for individuals for federal income tax.
3. Prepare Schedule K-1 by using information from Partnership and S Corporation tax returns.
4. Case study analysis of Schedule M-1 of Form 1120 to reconcile profit per books with the profit per tax return.
5. Evaluate various scenarios that are subject to gift and estate taxes.
6. Present a comparative chart of the common law and statutory liabilities of a CPA auditor.

COURSE OUTCOME:

Students will be able to

1. Achieve knowledge and skills that a public accountant must demonstrate with respect to federal income taxation of individuals.
2. Achieve knowledge and skills with respect to federal income taxation of property transactions.
3. Achieve knowledge and skills with respect to federal income taxation of C-Corporations.
4. Achieve knowledge and skills with respect to federal income taxation of S-Corporations.
5. Achieve knowledge and skills with respect to federal income taxation of partnerships, estates & trusts and tax-exempt organizations.
6. Understand federal security regulations as well as legal issues that affect the public accountant and his/her practice.

Books for Reference:

- Miles CPA Review Concept Book: Regulation, Miles Education
- Wiley CPA Excel Exam Review Course Study Guide: Regulation, John Wiley & Sons
- Internal Revenue Code: Income, Estate, Gift, Employment and Excise Taxes, CCH Tax Law Editors
- Federal Income Tax: Code and Regulations--Selected Sections, Martin B. Dickinson, Wolters Kluwer
- Federal Income Taxation by Katherine Pratt and Thomas D. Griffith, Wolters Kluwer
- Federal Income Taxation (Concepts and Insights), Marvin Chirelstein and Lawrence Zelenak, Foundation Press

ELECTIVE IX: INSURANCE

UG 24 VEIN: PRACTICE OF GENERAL INSURANCE

COURSE OBJECTIVE:

The objective of this course is to provide students with a comprehensive understanding of general insurance principles, products, and practices along with an understanding of historical development of general insurance, the intricacies of insurance contracts, various types of general insurance products, underwriting processes, premium pricing mechanisms, claims management, and insurance reserves and accounting.

Module 1: Introduction to General Insurance

8 Hrs

Origin, Historical milestones, Structure of India general insurance market, Classification of general insurance companies, International Insurance market, Roles in Insurance: Regulator, Insurer, Insured/customer, Distributors, other intermediaries, and professionals.

Module 2: Insurance Contracts

6 Hrs

Understanding the Insurance contract, structure of insurance policy, Interpretation of policy, Insurance proposal forms and certificates.

Module 3: General Insurance Products

10 Hrs

Types of general insurance products, Understanding the Cover, special endorsements, special policies and consequential loss under Fire insurance policy, Marine cargo policy, Motor insurance policy, Personal accident, health & specialty policies, engineering insurance policies

Module 4: Underwriting

6 Hrs

Concept of underwriting, process, Risk sharing, Risk management and steps involved.

Module 5: Rating and Premiums and Claims

8 Hrs

Premium pricing mechanism, Concept of soft and hard market. Basics of claims, claims process, process of claims management, main issues and problems in claims

Module 6: Insurance Reserves and Accounting

7 Hrs

Different types of reserves maintained by insurance companies, reserving process followed by insurance companies, Premium investment strategies followed by insurance companies,

Skill Development:

1. Group discussions, case studies, and group projects can be initiated to analyze insurance products and solve complex problems.
2. Projects can be given to evaluate the existing problems in insurance policies.
3. Assignments can be given to analyze complex insurance products, contracts, and underwriting processes, enabling them to assess risks and make informed decisions.

COURSE OUTCOMES:

1. Describe the structure of the Indian general insurance market and the classification of general insurance companies.
2. Understand the components of an insurance contract and the structure of an insurance policy and interpret insurance policy language and clauses.

3. Analyze consequential loss under various insurance policies.
4. Describe the underwriting process and the steps involved and assess risk- sharing and risk management strategies in underwriting.
5. Identify common issues and problems in claims processing and propose solutions.
6. Identify different types of reserves maintained by insurance companies and understand the fundamentals of insurance accounting and financial reporting.

Books for Reference:

Reference books from Insurance Institute of India

ELECTIVE IX: INSURANCE
UG 24 VEIN 601: PRACTICE OF LIFE INSURANCE

COURSE OBJECTIVE:

Through this course, the students will gain insights into the Indian insurance market, the organizational setup of life insurance companies, premium calculation methods, various types of life insurance plans, policy documentation, claims processing, and other relevant aspects of the life insurance industry.

Module 1: Organizational structure of a Life Insurance Company **6 Hrs**

Overview of Indian Insurance Market, Organizational structure of a Life Insurance Company, Life insurance agents and their duties, Remuneration of agents and conditions for continuation of an agency, Trends in life insurance distribution channels.

Module 2: Premiums and Bonuses & Plans of Life Insurance **8 Hrs**

Elements constituting the premium, different types of Premiums, Factors considered to calculate tabular premium, concept of bonus. Different Life insurance plans, Concept of Unit-linked insurance plans, Concept of riders, Features of Micro Insurance Policies, Benefits of married women's property Act, Importance of Key-Man Insurance, Importance of Health insurance. Concept of Annuities – Annuity, different types of annuities plans, advantages, and disadvantages of Annuity.

Module 3: Group Insurance & Unit Linked Life Insurance Products **4 Hrs**

Importance of Group Insurance, different group insurance schemes, Concept of Unit linked insurance plan, features, Comparison of ULIPs with traditional insurance products.

Module 4: Applications and Acceptance & Policy Document **9 Hrs**

Fundamentals of a Life insurance contract, life insurance application process, underwriting of life insurance policies. Importance of policy document and information, conditions and privileges in an insurance policy, new standard format of policy document.

Module 5: Nomination, Loan and Fore-closure under a policy **10 Hrs**

Factors in calculation tabular premium, Surrender value and non-forfeiture options, Revival of lapsed policies. Assignment of insurance policies, Nomination- Features and importance. Loan and fore -closure under life insurance policies.

Module 6: Policy Claims **8 Hrs**

Policy claims, Types – Death, Early and Non-early claims, Proof of title of claimant, Claim concession and presumption of death. Accidental death benefit, permanent disability benefit and option to receive death benefit in instalments.

Skill Development:

1. Group discussions, case studies, and group projects can be initiated to analyze life, group and unit linked policies products and solve complex problems.
2. Projects can be given to evaluate the existing problems in life insurance policies.
3. Assignments can be given to analyze the policy documents, process of claim and problems associated with life insurance, group and unit linked policies

COURSE OUTCOME:

Student will be able to:

1. Identify the key components of the organizational structure of a Life Insurance Company.
2. Compare and contrast different life insurance plans including Unit-linked insurance plans, riders, Micro Insurance Policies, and Key-Man Insurance.
3. Compare ULIPs with traditional insurance products.
4. Familiarize with the conditions and privileges in an insurance policy, including the new standard format of the policy document.
5. Analyze the proof of title required for claimants and evaluate claim concessions and presumptions of death.

Books for Reference:

Reference books from Insurance Institute of India.