VOCATIONAL ENHANCEMENT COURSES
2023-2024

VOCATIONAL ENHANCEMENT COURSE		
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 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
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17	UG 21 VE 017	Air Fair & Ticketing
18	UG 21 VE 018	Hospital Management
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20	UG 21 VE 020	Applications of Analytics in Business
21	UG 21 VE 021	Stock Trading
22	UG 21 VE 022	Digital Marketing

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   8Hrs
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   5Hrs
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   10Hrs
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 12Hrs
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   10Hrs.
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   10Hrs.
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   10Hrs.
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   10Hrs.
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   10 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   10 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 francize 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   10Hrs
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   15Hrs
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   15 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

❖ *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   **10Hrs**
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   **10 Hrs**
Organizational Management, Business Partner, and Product catalogues, Warranty Management, Solution Database, Territory Management.

Module – 3: CRM- Functions   **10Hrs**
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   **10Hrs**
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   **10 Hrs**
ICSS Service- Internet Customer Self Service, Campaign Management, Segmentation, Lead to cash, Email work list, Template designer, Survey tool.

Module – 6: CRM Analytics   **10 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 B2Band B2C channels.
5. Show how to run CRM analytics through embedded competitors'
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 p eople . 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   10Hrs
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   10Hrs
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?   8 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   7 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   7 Hrs
Talk about clothes and describing people. Grammar: Adjectives and their accordance. Vocabulary: Clothes, colours, characteristics of people.

Module 6 - Cena fuera   8 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   6Hrs
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   14Hrs
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   12Hrs
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.   14 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 S e r v i c e Skills and Selling Skills. Techniques Of various bank products with importance to professional a n d 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   **12 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   **12 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   **12 Hrs**
Auto filter, advanced filter, sorting, Error proofing, Custom formatting, conditional formatting, data validation, data cleaning, text formatting

Module 4: Bivariate Analysis   **12 Hrs**
Correlation, Methods of Regression (Scatter plot), Simple Linear Regression, T test and chi square

Module 5: Time Series   **12 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   10Hrs
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   10Hrs
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   10 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   10Hrs
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   10Hrs
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)   10Hrs
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, Gannt 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
❖ *Mastering Tableau 2021: Implement advanced business intelligence techniques*

and analytics with Tableau, 3rd Edition - ISBN-13 : 978-1800561649

❖ *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, san 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

- *Baird, R. N., Turnbull, A.T. & McDonald Duncan. (1987). The Graphic Communication. Canada: Holt, Rinehart and Winston.*
- *Crow, W. C.(1986). Communication Graphics. New Jersey: Prentice-Hall*
- *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.*
- *Meggs, P. B. (1992). Type and Image: The Language of Graphic Design. New York: John Wiley and Sons Inc.*
- *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 rule, 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

Module 1: Introduction to SAP
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
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
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
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
Cost estimation – Price updating – Cost sheet maintenance – Costing variant maintenance – Work in progress calculation – Variance calculation – Order settlement

Module 6- Profitability Analysis
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
Configuration of financial statement versions – Execution of reports – Year-end

closing activities – Period -end closing activities.

UG 21 VE 015: HOSPITALITY MANAGEMENT

Module 1: Introduction to Hospitality   **10Hrs**
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   **10Hrs**
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   **10 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   **10Hrs**
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   **10Hrs**
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   **10Hrs**
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   6 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   14Hrs
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   14 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   **6Hrs.**
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   **18 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   **30Hrs.**
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
- grown 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:

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: APPLICATIONS OF ANALYTICS IN BUSINESS

COURSE OBJECTIVE
The course aims to equip students with an understanding of the Fintech industry landscape and its effects on finance, accounting systems and the integration of technology in financial systems. It will enable students to develop practical skills in data analytics, visualization, and relevant technologies, enabling them to engage effectively in the modern finance landscape.

Module 1: Evolution of Industry and its impact on Finance   5 Hrs
Evolution of Industry over the years – Importance of the new technologies in Industry Impact on the Finance, Accounting, and Taxation systems. E-Payments and its enabling technologies. - Digitization of Financial Services – Fintech & Funds - Crowd Funding – P2P and Marketplace Lending – Technologies in Finance transformation – Indian context of digital & alternative finance

Module 2:   Tech-Fin and Data Analytics   10 Hrs
Data Regulation – Digital Identity Open Banking API- - Data, Metadata & Differential Privacy – Methods of Data protection- Invoice Discounting in digital module - Different types of Data – Systems used in Analytics – Types of Analytics –Analytics in companies – Analytics & Automation - 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

Module 4: Intermediate Visualizations using Power BI   15 Hrs
Loading more complex datasets – Data Modelling – Advanced Formulae – Creating custom measures and parameters – Advanced Visualisations

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.
2. Comprehend financial innovation's history, digitization's role, Fintech, Crowd Funding, P2P lending, and ICOs. Analyze Indian digital finance context through case study.
3. Differentiate data types, explore analytics systems, and analyze their advantages, disadvantages, and applications. Recognize analytics failures, data privacy, and GDPR implications.
4. Recognize visualization importance, load data into Power BI, develop basic reports, and use standard formulae for data modeling.
5. 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 2019.*

Recommended References

1. *Solove, D. J. Understanding Privacy. Harvard University Press 2009.*
2. *Fawcett, T. Data Science for Business. O'Reilly; 1st edition.*
3. *Foreman, J. W. Data Smart: Using Data Science to Transform Information into Insight. Wiley I Edition 2013*
4. *Chishti, S.The Legal Tech Book. Wiley I Edition 2020.*

UG 21 VEC 021: STOCK TRADING

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   **4 Hrs**

Overview of Financial System: Institutions, Markets, Instruments & Services - SEBI & RBI - Capital Markets – Primary Market: IPO: Types, Procedure & Participants – Types of Financial Instruments – Credit Rating

Module 2: Stock Market Participants   **6 Hrs**

Regulatory Bodies: SEBI & RBI – Depositories – Depository Participants – Brokers – Investors: Institutional & Retail Investors Stock Exchanges – Stock Market Indices

Module 3: Stock Trading   **5 Hrs**

Demat Account – Trading Account - Procedure for Trading – Types of Orders – Clearing & Settlement – Factors considered for choosing a Broker

Module 4: Fundamental Analysis   **8 Hrs**

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

Module 5: Technical Analysis   **12 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   **10 Hrs**

Introduction – Features of a Financial Derivative – Types of Financial Derivatives –Uses of Derivatives – Critiques of Derivatives - Forward Contract: Features, and Trading Mechanism – Futures Contracts: Features - Classification of Futures Contracts & Forward Trading Mechanism – Forward Prices vs Future Prices - Options – Moneyness of the Options – Intrinsic Value and Time Value - Pay-off for Options - Option Trading Strategies: Bullish strategies/Bearish strategies/Neutral strategy-any two strategies from each category

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. Study SEBI, RBI, and their roles; analyze the functions of stock exchanges, depositories, and depository participants.
4. Participate in mock trading sessions to simulate real-life trading experiences, practicing

different types of orders and their execution.
5. Engage in hands-on exercises related to clearing and settlement processes, ensuring understanding of trade finalization.
6. Analyze real-world charts applying Dow Theory, understanding various chart types and identifying patterns.
7. Practice identifying candlestick patterns like doji, hammer, etc., and learn their implications.
8. Work with technical indicators like MACD, EMA, ROC, RSI, and Stochastic Oscillators, applying them to historical data for trend analysis.

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

1. Understand capital markets, IPO procedures, stock exchanges, and financial instruments comprehensively.
2. Gain insights into regulatory bodies, stock market functions, depositories, brokers, and investor types.
3. Develop proficiency in trading procedures, order types, and clearing and settlement processes.
4. Master the fundamental analysis using Screener or any other platform
5. Master technical analysis basics, including Dow Theory, chart patterns, candlesticks, and key technical indicators' application
6. Master derivative trading and various strategies

BOOK FOR REFERENCE
- *Avadhani, Security Analysis & Portfolio Management, 12th Revised Edition, Himalaya Publishing House, 2020*
- *Bhalla, Security Analysis & Portfolio Management, 11th Revised Edition, S Chand Publication, India, 2020*
- *Murphy, J. J. (2023). Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications. New York Institute of Finance.*
- *Prasanna Chandra, Managing Investments, 6th Edition, McGraw Hill Education, 2021*
- *Punithavathy Pandian, Security Analysis & Portfolio Management, 5th Edition, Vikas Publishing House, 2013*

UG 21 VEC 022: DIGITAL MARKETING

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

Module 1 - Introduction to Digital Marketing   08 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   08 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 Introduction to behavioural targeting Online surveys- blog mining- data mining- Building customer profiles using navigation and sales data competitor analysis online- Integrating online and offline strategies.

Module 3 - Search Engine Optimization and Marketing   14 Hrs
Meaning and Introduction - keywords - Different types of keywords – Google keyword planner tool - Keywords research process – Understanding keywords mix. Email campaign creation and management-Google Adwords- search and display on search engines- pricing models online Introduction to page rankings- Google Adwords analytics- Search Engine Optimization (SEO)- Process and methodology- process and optimization Search Engine Marketing - Paid versus natural Search- SEM landscape- Landing pages and their importance in conversion analysis.

Module 4 - Tools of Digital Marketing   15 Hrs
Email Advertising: Introduction –Creating Marketing Message - Challenges faced in sending bulk emails - Types of email marketing- Opt-in & bulk emailing-Online Display Advertising- Mobile and Web Marketing- Social Media Marketing(SMM)- Types of Online Advertising - Display Advertising – Contextual advertising - ecommerce websites-Pay per Click Adverting- Google AdWords and Google Analytics Understanding in organic search results - Introduction to Google AdWords and Pay-Per-Click (PPC) advertising Introduction to Social Media Advertising – Creating a Page - Increasing fans on fan page - marketing on fan page Fan engagement - Types on Facebook- Twitter- Instagram- LinkedIn and Video advertising – Measuring Results Digital Marketing Understanding Mobile Devices - Mobile Marketing and Social Media - Mobile Marketing Measurement and Analytics - Advertising on mobile (App & Web) - Mobile marketing mix - SMS marketing.

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.

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 vide 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, 1st Edition, 2009*

❖ *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, 3rd Edition, 2014*

❖ *Jonah Berger, Contagious Why Things Catch On, Simon & Schuster,2013*

VOCATIONAL ENHANCEMENT COURSE – ELECTIVE SPECIFIC

VOCATIONAL ENHANCEMENT COURSE		
ELECTIVE 7 - BUSINESS ANALYTICS		
VEC-1	UG 21 VECBA 501	Statistical Decision Making for Business Analysis
VEC-2	UG 21 VECBA 601	Applications of Business Analytics (Python)
VEC-3	UG 21 VECBA 701	AI-ML and its Business Applications - I
VEC-4	UG 21 VECBA 801	AI-ML and its Business Applications - II
ELECTIVE 8 - INTERNATIONAL PUBLIC ACCOUNTING		
VEC-1	UG 21 VECIPA 501	International Tax - 1
VEC-2	UG 21 VECIPA 601	International Tax - 2
VEC-3	UG 21 VECIPA 701	Business Analysis and Reporting
VEC-4	UG 21 VECIPA 801	Corporate governance, Information Systems & Controls (ISC)

SEMESTER V
ELECTIVE – VII: BUSINESS ANALYTICS
UG 21 VECBA 501: STATISTICAL DECISION MAKING FOR BUSINESS ANALYSIS

COURSE OBJECTIVES
This course aims to enable students with an understanding of statistics and compare the different statistical ways of analysing data.

Module 1: Introduction to Statistics   8 Hours
Applications of Statistics in Business - Presenting Data – Different Types of Data - Primary Data and Secondary Data - The Numeric Data - Continuous Frequency Distribution - Class Interval - Categorical data - Statistical Software for Analysis - Microsoft Excel: a walkthrough of Statistical capabilities in Excel.

Module 2: Descriptive Statistical Analytics   10 Hour
Calculating Measures of Central Tendency – Mean, Median and Mode - Calculating Measures of Dispersion - variance measures - Standard Deviation: The Coefficient of variation measures - Graphing data - Graphical measures - Measure of Skewness, Symmetrical distribution - Kurtosis – Univariate, bivariate and multivariate analysis

Module 3: Probability Theory & Distributions   9 Hours
Probability Theory and Distributions - Fundamental Concepts of Probability
- Definitions of Probability - Applying Laws of Probability - Bayes theorem - Calculating Random variable and Probability -Distribution with a Case Study - Probability Distribution

Module 4: Sampling and Confidence Intervals   9 Hours
Introduction to Sampling - Sampling Theory - Sampling Distribution - Using probabilistic Sampling Techniques - Estimating Sampling Errors and Confidence Intervals - Sampling Error and Non-Sampling Error - Central Limit Theorem - Case Study on Sampling Techniques

Module 5: Hypothesis Testing   9 Hours
Introduction to Null Hypothesis - Alternate Hypothesis - Testing Hypothesis for Large Samples - Test for Single Proportion - Test for Difference of Proportions - Testing Hypothesis for Small Samples - T-test - Applications of T-test - P-test - Calculating Analysis of Variance - Two-Way Factorial ANOVA - Multivariate Analysis of Variance - Performing Chi-Square Test - Applications of the C2 Test - Testing the Goodness of Fit - Case Study on Hypothesis Testing with Excel

COURSE OUTCOMES

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

1. Relate to the applications of Statistics in Business, different types of Data, Continuous Frequency Distribution, Categorical data and Statistical Software for Analysis.
2. Comprehend the Measures of Central Tendency, Dispersion, variance and Standard Deviation. Analyse the distribution of data by Class or Category using frequency distribution for quantitative data and qualitative values and cumulative frequency distributions.
3. Explain the fundamentals, definitions and laws of Probability and Bayes theorem.
4. Comprehend the concepts of Sampling Theory, Sampling Distribution, Sampling Techniques, Estimating Sampling Errors and Confidence Intervals.
5. Apply tests for Hypothesis for Large Samples, Single Proportion, Difference of Proportions and Hypothesis for Small Samples.

Books for Reference:

❖ Statistics for Big Data for Dummies; Alan Anderson, David Semmelroth; ISBN 9788126558223
❖ Data Mining and Business Intelligence (Includes Practicals); S.K. Shinde, Uddagiri Chandrasekhar; 789351197188
❖ Applied Business Statistics, 7ed, ISV (Author- Ken Black)
❖ Statistical Analysis with Excel For Dummies, 4th Edition; Joseph Schmuller; ISBN: 978-1-119-27116-1

SEMESTER VI
ELECTIVE – VII: BUSINESS ANALYTICS
UG 21 VECBA 601: APPLICATIONS OF BUSINESS ANALYTICS
(Python)

COURSE OBJECTIVES

This course enables students with basics of Python programming language and equips them with advanced features of Python for statistical analysis.

- Explore advanced topics such as inheritance, exceptions
- Understand the advance algorithms of search and sort in Python

Module 1: Getting Started with Python   8   hours

Installing Python, Basic input and output, Variables and assignments, Identifiers, Objects, Numeric types: Floating-point, Arithmetic expressions, Python expressions, Division and modulo", Module basics, Math module, Representing text, String basics, List and Set basics, Common data types summary, Type conversions, Binary numbers, String formatting

Module 2: Working with Loops and Functions   10 Hours

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: Using Python to Handle Data and Exploratory analytics in Python
                                                                         9 Hours

Important packages in Python, Data handling in Python, Data cleaning and Treatment, Performing Descriptive statistics in Python, using graphs and plots in python, performing various descriptive statistics in Python-central tendency measure, graphical measures, hypothesis testing, Using graphs and plots in python

Module 4: Strings, Classes and Exceptions   9 Hours

String slicing, Advanced string formatting, String methods, Splitting and joining strings, The string format method, Classes: Grouping data, Class methods, Class and instance object types, Class constructors, Class interfaces, Class customization, Classes as numeric types, Memory allocation and garbage collection, Handling exceptions using try and except, Multiple exception handlers, Raising exceptions, Exceptions with functions, Using finally to cleanup, Custom exception types

Module 5: Recursion, Plotting, Searching Sorting Algorithms   9   Hours

Recursive functions, Recursive algorithm: Search, Adding output statements for debugging - Creating a recursive function, Recursive math functions, Recursive exploration of all possibilities - Searching and algorithms, Binary

search, O notation, Algorithm analysis, Sorting: Introduction, Selection sort, Insertion sort, Quicksort, Merge sort**.**

COURSE OUTCOMES

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

1. Enumerate basic understanding of the Python programming language
2. Apply control structure such as branches, loops and functions
3. Perform dependent libraries usage, basic graphing and statistical analysis using graphs in Python.
4. Enumerate Python through installation, basic numerical and string expressions, listing and formatting.
5. Illustrate conditional logic, branching and iteration.

Books for Reference:

❖ Python for Data Science for Dummies; John Paul Mueller, Luca Massaron; ISBN: 9788126557394
❖ Core Python Programming, 2ed; Dr.R. Nageswara Rao; ISBN: 9789386052308
❖ Machine Learning using Python; Manaranjan Pradhan, U Dinesh Kumar; ISBN: 9788126579907
❖ Machine Learning (in Python and R) For Dummies; John Paul Mueller, Luca Massaron; ISBN:9788126563050

SEMESTER VII
ELECTIVE – VII: BUSINESS ANALYTICS
UG 21 VECBA 701: AI-ML AND ITS BUSINESS APPLICATIONS - I

COURSE OBJECTIVES
This course aims to provide overview of Artificial Intelligence and its components and to equip students with various supervised machine learning techniques and algorithms.

Module 1: Introduction to AI 8 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 Techniques 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 9 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 9 Hours
Introduction to clustering - Agglomerative Hierarchical clustering - Clustering by similarity aggregation - K- Means clustering - Applications of clustering

Module 5: Random Forest & Boosting 9 Hours
Ensemble learning and Models - Bagging and Random forest - boosting algorithm – Adaboost - Gradient boosting machines and interpretation

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

SEMESTER VIII
ELECTIVE – VII: BUSINESS ANALYTICS
UG 21 VECBA 801: AI-ML AND ITS BUSINESS APPLICATIONS - II

COURSE OBJECTIVES
This course aims to equip students with knowledge on analytics in solving various business problems in HR, Finance and Marketing domains.

Module 1: AI and Analytics in Health-Care   **8 Hours**
AI-driven Clinical Decision Support - Predictive Analytics for Population Health Management - Machine Learning for Diagnostic Imaging - Automated Disease Detection and Monitoring

Module 2: AI and Analytics in Supply Chain   **10 Hours**
Emerging trends in Supply Chain, Business case for analytics in Supply Chain, Applications of analytics in Supply Chain – Inventory and Warehouse management, Demand Forecasting

Module 3: AI and Analytics in Finance   **9 Hours**
Changing landscape of finance, Role of analytics in Finance, Types of finance data and its source, using analytics for communicating KPI, Application of forecasting techniques, use of predictive analytics, Leveraging optimization techniques

Module 4: AI and Analytics in Marketing   **9 Hours**
Explore the impact of Ai in marketing, application of AI in customer journey, application of Ai in media optimization

Module 5: AI and Analytics in HR   **9 Hours**
Emerging trends in HR, Business case for analytics in HR, Applications of analytics in HR – recruitment, L&D, measuring employee engagement, compensation mgmt., Using CRISP DM for problem solving, working with HR metrics

COURSE OUTCOMES
After completion of the course the students will be able to:
1. Comprehend the impact of Artificial Intelligence in marketing, understand its implications, determine how to optimize AI in this field and apply the learnings to use cases.
2. Understand and apply various methods of using Artificial Intelligence to the various components of Human Resources field including recruitment, employee engagement and compensation.

Books for Reference:
- ❖ AI and Analytics: Accelerating Business Decisions; Sameer Dhanrajani; ISBN: 9788126573035
- ❖ Big Data MBA: Driving Business Strategies with Data Science; Bill

ELECTIVE – VIII: INTERNATIONAL PUBLIC ACCOUNTING UG
UG 21 VECIPA 501: INTERNATIONAL TAXATION - I

COURSE OBJECTIVE
This course enables students with the knowledge on filing requirements of US individual income tax return along with available deductions.

Module 1: Individual Income Tax Return & Gross Income   9   Hours
Overview of Form 1040, Filing requirements for Form 1040–Filing Status, Dependents – Qualifying Child or Qualifying relative, Tax accounting – Cash basis vs. Accrual basis, Wages, Salaries, Bonus, Commission, Fees & Tips, Schedule B – Interest & Dividend, Schedule C or C-EZ – Business Income, Schedule D – Capital gains & losses, Schedule E – Passive Income (Rent, Royalty & Flow through entities income), Schedule F – Farming Income. Social security benefits, Individual retirement account, Pensions & Annuities, Refunds of state taxes, Unemployment Compensation, Other Income, Earnings from Foreign Sources, Non-taxable Miscellaneous Items

Module 2: Adjustments & Deductions from AGI   7   Hours
Withdrawal of savings penalty, Individual Retirement Account deduction, Self-Employment Tax & benefits for self-employed, Health Savings Account, Educator Expenses, Student Education Loan Interest deduction, other adjustments, Standard deductions, Itemized deductions, Medical & dental expenses, Taxes Paid, Interest Expense, Charitable Contributions, Casualty & Theft Losses

Module 3: Calculating Tax & Tax Credits   5   Hours
Form 1040 details, Federal Income Tax brackets – Calculation, Kiddie tax calculated on Child's Tax return (Form 8615), Kiddie Tax rates, Adoption Credit, Child Tax credit, Education Credit, Dependent & Child care credit, Earned Income Credit, Elderly & disabled credit, Saver's Credit, Foreign Tax Credit, Business Credits, Withholding Tax / Excess FICA,
Federal Insurance Contributions Act (FICA) Tax–Social Security, Medicare, Tax rates, Self-Employment Taxes, Federal Unemployment Tax (FUTA), Estimated tax payments due on Form 1040ES, late payment, late filing, Additional accuracy-related penalty

Module 4: Capital Gains & Losses   10   Hours
Calculating capital gains & losses; Exception when capital gain is realized, but not recognized; Exception when capital loss is realized, but not recognized, Short-term Capital Gains & Losses Rules, Long-term Capital Gains & Losses Rules, Net Capital Loss, Carryback/Carry-forward

Module 5: Sale of business Assets   7   Hours
Ordinary Income Assets, Section 1231 Assets, Capital Assets, Section 1245

Module 6: Depreciation and Amortization   **7 Hours**

Form 4562, Depreciation & Amortization, Special Depreciation Allowance, MACRS Depreciation, Section 179 Expense, Depletion

COURSE OUTCOMES

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

1. Understand the filing requirements of US individual income tax return and the items for gross income taxation.
2. Determine the adjustments and deductions available to Individuals filing US income tax return.
3. Determine the tax liability of individuals and tax credits available to reduce the liabilities.
4. Understand the capital gains and losses rules for individuals and entities.
5. Understand the tax effects of the sale of business assets.
6. Learn and apply the depreciation and amortization rules to individuals and entities.

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

SEMESTER VI
ELECTIVE – VIII: INTERNATIONAL PUBLIC ACCOUNTING UG
UG 21 VECIPA 601: INTERNATIONAL TAXATION - II

COURSE OBJECTIVE
This course equips students with the tax implications of formation, operations and liquidation of S Corporation, Partnership & Tax-exempt entities.

Module 1: Formation of C Corporation and its Income Tax Return 8 Hours
Issuance of stock in exchange for cash, property–taxable at NBV and at FMV, Reorganizations, Gross profit, net receipts, COGS, dividends & inclusions, capital gains, Gains/Losses from Sale of Business Property, Ordinary, necessary & reasonable trade expenses, charitable contributions, net operating losses (NOL) carryover, special deductions

Module 2: Reconciliation of Taxable Income with books and Tax Computation   6 Hours
Reconciliation of book income to taxable income, beginning retained earnings to ending retained earnings, Schedule M-1, M-2, & M-3, Temporary vs. Permanent Differences, Corporate Tax, Base Erosion Anti-abuse Tax, Foreign Tax Credit, Penalty Taxes, underpayment penalties.

Module 3: Corporate Earnings, Distributions, Liquidation, & Reorganizations   7 Hours
Current E&P vs Accumulated E&P, Corporate Distributions, Stock Redemptions, Corporate Liquidation, Corporate Reorganizations, Small Business Stock

Module 4: S-Corporations, Partnerships & Tax-Exempt Organizations
**   10 hours**
S-Corporation Eligibility Criteria and Formation / Election, Income Tax Return, Shareholder basis, Earnings & Distributions, Termination of Election, Corporation Taxes, Formation of partnership, partnership income tax return, partner's basis in the partnership, Partnership distributions, sale of partnership interest by a partner, termination of partnership, Formation of Tax-exempt Organizations-IRS Section 501, Tax-exempt Income Tax Return-Form 990

Module 5: Supplementary Taxation Topics   6   Hours
US Federal Tax Returns-Overview, Forms & Schedules, Internal Revenue Code (IRC), Subtitles, Chapters, Subchapters, Parts, Subparts, Sections, and Subsections, Internal Revenue Code of 1986, Tax planning, Federal Tax Legislative Process, Federal Tax Procedures-Audits & Appeals Process, Choice of Courts, Assessments, Collection from Transferees & Fiduciaries, Closing Agreement & Compromise, Claims for refund, Penalties imposed on Taxpayers, State and Local Taxation (SALT), International Taxation-US Taxation on Foreigners, Foreign Activities of US individuals/corporations, Transfers of property to foreign corporations, Transfer pricing

Module 6: Professional & Legal Responsibilities & Business Structures

8 Hours

Accountant Common Law Liabilities – Breach of Contract, Negligence, Fraud or Gross Negligence; Accountant Statutory Liabilities – Securities Act of 1933, Securities Act of 1934; Accountant Liabilities for Privileged Information, Accountant Criminal Liabilities, Licensing and Disciplinary Systems, Tax Return Preparation; Business Structures – Sole Proprietorships, Partnerships – Formation, Operation, Rights, Duties & Liabilities, Admitting or Retiring a partner, Dissociation, Dissolution and Termination; Other types of partnership, Corporation – Nature & Formation, Operations, Equity & Dividend distributions, Rights & Liabilities of shareholders, Comparison of various business entities

COURSE OUTCOMES

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

1. Understand the formation of C Corporation and the Form 1120
2. Reconcile the differences between book and taxable income (loss) of a business entity.
3. Evaluate the earnings & distributions of C Corporations to its shareholders and understand the tax implications of liquidating and reorganizing C corporations.
4. Learn the tax implications of formation, operations and liquidation of S Corporation, Partnership & Tax-exempt entities
5. Understand various supplementary of topics affecting individuals and business entities.
6. Learn about the professional and legal responsibilities of accountant and the legal business structure of various entities.

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

SEMESTER VII
ELECTIVE – VIII: INTERNATIONAL PUBLIC ACCOUNTING
UG 21 VECIPA 701: BUSINESS ANALYSIS AND REPORTING

COURSE OBJECTIVE

Module 1: Current period/historical analysis, including the use of data

8 Hours

Non-financial and non-GAAP measures of performance, Managerial and cost accounting, Managerial and cost accounting & Budgeting, forecasting and projection

Module 2: Prospective analysis, including the use of data   8   Hours

Budgeting, forecasting, and projection, Capital structure &   Investment alternatives using financial valuation decision models, Economic and market influences on a business.

Module 3: Technical Accounting and Reporting   7   Hours

Indefinite-lived intangible assets, including goodwill, Internally developed software, Revenue recognition & Stock Compensation (share-based payments)

Module 4: Business Consolidation Accounting   6   Hours

Consolidated financial statements, Leases, Financial statements of employee benefit plans,   Governmental funds financial statements, and Proprietary funds financial statements.

Module 5: Typical items and specific types of transactions and events: measurement, valuation, calculation, and   8   hours

Net position and components thereof, Fund balances and components thereof, Capital assets and infrastructure assets, & General and proprietary long-term liabilities,

Module 6: presentation in governmental entity financial statements 8 Hours

Interfund activity, including transfers, Nonexchange revenue transactions, Expenditures and expenses & Budgetary accounting and encumbrances.

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

1. Non-financial and non-GAAP measures of performance, including use of the balanced scorecard approach and interpretation of non-financial and non-GAAP measures to assess an entity's performance and risk profile
2. Managerial and cost accounting concepts and the use of variance analysis techniques
3. Factors that influence an entity's capital structure, such as leverage, cost of capital, liquidity and loan covenants
4. The Committee of Sponsoring Organizations of the Treadway Commission

(COSO) Enterprise Risk Management framework, including how it applies
to

environmental, social and governance (ESG) related risks

5. The effect of changes in economic conditions and market influences on an entity's business

Books for reference:

- Miles CPA Review Concept Book: Business Analysis and Reporting
- Wiley CPA Excel Exam Review Course Study Guide: Business Analysis and Reporting, John Wiley & Sons
- Writing Effective Use Cases Agile Software Development Series
- 7 Steps to Mastering Business Analysis Author: Barbara A. Carkenord

Mastering Business Analysis Versatility Author: Eugenia C. Schmidt

SEMESTER VIII
ELECTIVE – VIII: INTERNATIONAL PUBLIC ACCOUNTING
UG 21 VECIPA 801: CORPORATE GOVERNANCE, INFORMATION SYSTEMS & CONTROLS (ISC)

COURSE OBJECTIVE

Module I: Corporate Governance   7   Hours
Corporate law, state & federal statutes, common law, internal law, articles of incorporation, bylaws of the corporation, shareholders' rights, board of directors, forms of executive compensation, base salary, executive compensation, Monitoring devices, board of directors, different committees, stock exchanges, internal auditors, external auditors, securities analysts, credit rating agencies, attorneys, SEC, Sarbanes-Oxley Act-2002, other acts, Regulatory pronouncements, COSO Internal Control Framework, Objectives of internal control, components, limitations, regulations, COSO ERM framework, overview and components of ERM, assessing ERM

Module 2: Microeconomics   8 Hours
Demand Curve, Demand curve shifts – Positive and Negative Shifts, Factors resulting in shift in demand curve – Price of substitute goods, Consumer income, Size of the market, Expectation of price increase, Price of complement goods, Consumer income/wealth, Point method, Mid-point Method; Income Elasticity – Income elasticity of demand, Cross-elasticity of demand, Utility, Marginal Utility, Personal disposable income, Consumer behaviour, products in the short-run and long-run, income and substitution effects of price changes, consumer surplus, Supply curve shifts – Positive shift, Negative Shift, Factors resulting in shift of supply curve – Number of producers, Government subsidies, Expectation of price increases, Technological advancement, Increase in production costs, Price of related goods, Economic Profit, Price elasticity of supply – Elastic, Inelastic and Unitary, Market equilibrium, Costs of production.

Module 3: Macroeconomics   6 Hours
Key economic measures—GDP, GNP; Inflation, Unemployment, Interest rates, Money supply, Business cycles, Government involvement in the economy, International trade, Economic globalization

Module 4: Effect of Economic Environment on Strategy   8 hours
Business environment-micro environment & macro environment, Industry analysis, competitor analysis, target market determination, Perfect competition, pure monopoly, monopolistic competition, oligopoly, Strategic planning, business strategies—classification

Module 5: Information Technology-I   8 Hours
Information Systems within a Business-general types, systems design &

process improvement, Characteristics of IT Systems – General-types of computers, hardware, software, methods of processing, data structure, types of networks, microcomputers & end-user computing, electronic commerce-EDI, EFT; XBRL, Telecommunications, Computer service organizations

Module 6: Information Technology-II   **8   Hours**
Big data, data analytics, artificial intelligence, machine learning & automation, digital business models, cloud and mobile computing, blockchain & cryptocurrencies, COBIT, Effect of IT   On Internal Control-general & application controls, effect of IT on auditing, flowcharting.

COURSE OUTCOMES
After completion of the course the students will be able to:
1. Understand the regulatory requirements and the corporate governance structure to be followed by public companies.
2. Analyze the effect of microeconomic concepts on businesses.
3. Analyze the effect of macroeconomic concepts on businesses.
4. Analyze the effect of economic environment on strategy.
5. Understand the characteristics of IT systems.
6. Understand the evolving role of IT in business, internal control and auditing.

Books for Reference:
- Miles CPA Review Concept Book: Financial Accounting & Reporting, Miles Education
- Freakonomics: A Rogue Economist Explains the Hidden Side of Everything - Steven Levitt and Stephen J. Dubner
- Prices and Quantities: Fundamentals of Microeconomics - Rakesh V. Vohra
- Advanced Macroeconomics by David Romer
- NYSE Corporate Governance Guide
- Introduction to Information Technology by Rajaraman V
- Introduction to Information Technology: ITL Education Solutions Limited by ITL ESL
- An Introduction to Information Theory: Symbols, Signals and Noise by John R Pierce
- Fundamentals of Information Technology by Alexis Leon and Mathews Leon