Note : The list of experiments is not limited to those mentioned above. A comprehensive set of programming or software tool-based exercises may be developed by the respective faculty members.

SEMESTER-II

COURSE 3: FINANCIAL ACCOUNTING I

Theory **Credits: 4** **4 hrs/week**

Course Objectives
This course is designed to:

- Understand and explain the foundational principles, concepts, and process of accounting, including classification and rules of debit and credit;
- Record and process business transactions through journals, ledgers, subsidiary books, and correct errors through rectification entries;
- Apply and compare different methods of depreciation and amortisation to account for asset value reduction;
- Identify and distinguish between provisions and reserves and apply their treatment in final accounts with suitable adjustments; and
- Prepare accurate final accounts (Trading, Profit & Loss, and Balance Sheet) incorporating necessary adjustments.

Course Outcomes (COs)

Upon successful completion of this course, students will be able: to
CO1: Understand the basic concepts of financial accounting;
CO2: Analyse the accounting process;
CO3: Enable the students to understand the various methods of depreciation and its calculation;
CO4: Examine the impact of provisions and reserves on profitability of business;
CO4: Workout with final accounts and assess the financial position of the concern.

SYLLABUS

Unit – I: Introduction
Meaning– Definitions -Objectives – Functions – Bookkeeping and Accounting – Branches of Accounting - Advantages and Limitations –GAAP- Accounting Concepts and Conventions – Accounting Cycle- Double Entry Accounting System- Classification of Accounts - Debit and Credit Rules. (Theory)

Unit – II: Accounting Process
Journal –Ledger – Subsidiary Books- Single, Double and three Column Cash Book-Preparation of Trial Balance- Rectification of Errors (Including Problems)

Unit – III: Depreciation & Amortisation
Meaning and Causes of Depreciation & Amortisation – Depreciation Vs Amortisation-Methods of Depreciation: Straight Line – Written Down Value – Annuity and Depletion Method (Including Problems).

Unit – IV: Provisions and Reserves
Provisions and Reserves – Meaning – Objectives – Types of Provisions and Reserves – Differences between Provisions and Reserves – Accounting Treatment – Journal Entries – Adjustment in Final Accounts – Impact on Profit – (Including Problems).

Unit – V: **Final Accounts**
Preparation of Trading Account, Profit & Loss Account and Balance Sheet with adjustments (Including Problems)

Activities

- Quiz on accounting principles, concepts, and classification of accounts.
- Assignment on classification of accounts and journal entries.
- Group activity: calculation of problems on depreciation using different methods.
- Comparative presentation of Depreciation and Amortisation.
- Field-based report: Collect and analyse final accounts of a local business.

References:

1. Ranganatham, G., & Venkataramanaiah, M. (2019). *Financial accounting*. New Delhi: S. Chand Publications.
2. Jain, S. P., & Narang, K. L. (n.d.). *Accountancy*. Ludhiana: Kalyani Publishers.
3. Arulanandam, M. A. (n.d.). *Advanced accountancy*. Mumbai: Himalaya Publishing House.
4. Goyal, V. K. (n.d.). *Financial accounting*. New Delhi: Excel Books.
5. Tulsian, P. C. (n.d.). *Accountancy–I*. New Delhi: Tata McGraw Hill Publishing Co.

SEMESTER-II

COURSE 4: E-COMMERCE AND WEB APPLICATION DEVELOPMENT

Theory **Credits: 3** **3 hrs/week**

Course Objectives:

1. Understand the evolution, types, and models of e-commerce, including technical, legal, and ethical frameworks. Explore web design technologies and content management systems relevant to e-commerce platforms.

2. Apply online marketing principles, SEO techniques, and e-payment systems with attention to logistics and risk management.
3. Design interactive and responsive websites using HTML5, CSS3, and client-side scripting with JavaScript.
4. Develop and customize CMS-based interfaces using the Bootstrap framework and responsive design principles.

Course Outcomes:

Learners will be able to:

1. Describe e-commerce models, revenue strategies, and legal considerations including cyber laws and data privacy.
2. Implement basic web structures using HTML5 and apply web design principles suitable for digital commerce.
3. Create and style dynamic websites using CSS for layout, animation, and visual enhancements.
4. Write client-side scripts using JavaScript to enable interactivity, form validation, and event handling.
5. Build responsive e-commerce front-ends using the Bootstrap framework, incorporating reusable UI components and custom styling.

UNIT-I

Introduction to E-Commerce: Definition, scope, and evolution, Benefits and limitations
Types of E-Commerce: B2B, B2C, C2C, C2B, G2C models
E-Commerce Business Models: Revenue models (advertising, subscription, etc.)
Infrastructure for E-Commerce : Internet, intranet, Extranet
Payment gateways and digital wallets Legal and Ethical Issues: Cyber laws and data privacy,Intellectual property, taxation, and security.
Case study : Study of successful e-businesses

UNIT-II

Technology in E-Commerce: Essentials of web design for business - Content management systems (WordPress, Shopify, BootStrap)
Online Marketing & SEO: Digital marketing channels, Search engine optimization basics.
Digital Payment Systems: Credit/Debit Cards, Net Banking, Mobile Wallets, UPI, Electronic Fund Transfer (EFT) , Payment Gateways – Blockchain and Cryptocurrencies, Artificial Intelligence and E-Commerce, Future of E-Commerce.
Web Designing: Web designing Principles, Introduction to HTML5, HTML Document Structure, Formatting Elements (text and block formatting), Lists, Images, Links and Navigation (External and internal links), Tables, Inlineframes, HTML Forms. Embedding multimedia objects.

UNIT III : Cascading Style Sheets

CSS Basics: CSS Rule, Applying CSS Rules (Selectors), Embedding CSS code in HTML page Inline,internal,external style sheets.
CSS Properties: Font, Color, Types of CSS Color values, Background, CSS Box Model, Display properties, Styling Pseudo Elements, Positioning properties, Layering, Styling Lists and tables.

UNIT IV: Client Side Scripting using JAVA SCRIPT

Javascript Basics: Datatypes, Variables, Operators, Control Statements, Functions.
Builtin Objects: Arrays, String, Date, Window, Document, RegEx.

Document Object Modelling: Introduction to DOM, Form Validation using Java Script, Event Handling: Mouse events, form submission events, load and unload events, keyboard events – focus and blur events.

UNIT V : BOOTSTRAP FRAMEWORK for designing CMS

Responsive Webdesign: Grid System, Breakpoints, Containers, Utilities.
Introduction to BOOT STRAP FRAME WORK: Benefits, Setup Bootstrap Project.
BootStrap Components: Navigation, Creating navigation bars (.navbar), Dropdowns, and Responsive togglers. Buttons-Styling buttons with various classes for size, color, and state. Forms-Styling form elements like inputs, labels, and client side validation. Carousels-Creating image sliders. Alerts: Displaying informative messages
Customization: Overriding Bootstrap's default styles using custom CSS

TEXT BOOKS & REFERENCE BOOKS

1. Whiteley, D., 2000. *E-commerce: Strategy, technologies and applications*. McGraw-Hill Education.
2. Turban, Efraim, David King, Jae Kyu Lee, Ting-Peng Liang, and Deborrah Turban. *Electronic Commerce: Concepts, Models, Strategies*. Pearson Education, 2002.
3. Robbins, Jennifer Niederst. *Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics*. 5th ed., O'Reilly Media, 2018.
4. Kogent Learning Solutions Inc. *Web Technologies Black Book*. Dreamtech Press, 2009.
5. Diwan, Amit. *Ultimate Bootstrap for Responsive Web Design*. Orange Education Pvt. Ltd., 2024. ISBN: 9789348107251.
6. Hussain, Frahaan, and Kameron Hussain. *Mastering Bootstrap 5: From Basics to Expert Projects*. Sonar Publishing, 2023. ISBN: B0CPW9PRVT.

E-Resources

1. NPTEL / SWAYAM Online Lectures ::Course: E-Business (NPTEL)
2. https://www.tutorialspoint.com/e_commerce/index.htm
3. https://www.w3schools.com/bootstrap5/
4. https://www.w3schools.com/ (HTML-CSS- JAVASCRIPT)
5. https://developer.mozilla.org/en-US/docs/Learn/CSS
6. https://www.freecodecamp.org/learn/2022/responsive-web-design/
7. https://developer.mozilla.org/en-US/docs/Learn/HTML
8. https://www.freecodecamp.org/learn/2022/responsive-web-design/

ACTIVITIES

UNIT 1 – Introduction to E-Commerce

Activity 1: Case Study – Amazon's Growth Story
Scenario:
Students analyze how Amazon evolved from an online bookstore to a global e-commerce leader.
Task: Identify Amazon's e-commerce model (B2C) and revenue models, List benefits and limitations faced during its evolution.
Expected Outcome: Students will understand the evolution of e-commerce and business

models.
Evaluation: Accuracy of model identification, Depth of analysis, Quality of presentation.
Activity 2: Case Study – Paytm and Digital Payments in India
Scenario:
Examine Paytm's role in enabling digital wallets and online transactions in India.
Task: Explain how Paytm works as a payment gateway, Discuss challenges faced related to cyber laws, taxation, and data privacy.
Expected Outcome: Students will relate theory with Indian e-payment ecosystems.
Evaluation: Correct explanation of payment gateway functions, Identification of legal/ethical issues.

UNIT 2 – Technology in E-Commerce
Activity 1: Case Study – Shopify Websites
Scenario:
Students explore Shopify-based small business sites.
Task: Analyze features of a Shopify store (design, responsiveness, content), Suggest 3 improvements for better customer experience.
Expected Outcome:
Students will understand CMS tools and good design practices.
Evaluation: Relevance of suggested improvements, Clarity of analysis.

UNIT 3 – CSS
Activity 1: Case Study – Homepage Redesign (FLIPKART)
Scenario:
Flipkart wants to revamp its homepage with modern CSS techniques.
Task: Suggest CSS improvements (color scheme, box model usage), Implement one of these changes in a sample HTML page.
Expected Outcome: Students will apply CSS properties for real-world UI improvement.
Evaluation: Creativity of suggestions, Correctness of CSS code.

Activity 2: Case Study – Netflix Interface Styling
Scenario: Analyze Netflix's web interface for user experience.
Task: Identify 5 CSS techniques used (hover effects, transitions, grids). Replicate one effect in a simple web page.
Expected Outcome: Students will recognize modern CSS practices.
Evaluation: Correct identification of techniques, Working replication of an effect.

Unit 4 – Client-Side Scripting
Case Study 1: Form Validation in IRCTC Booking Portal
Scenario: IRCTC uses JavaScript to validate passenger details (e.g., correct email format, age range, date picker) before allowing ticket booking.
Activity: Study how form validation prevents incorrect inputs during online train booking, Implement a simple form (name, email, age, travel date) and add JavaScript validation for each field.
Outcome: Students will be able to write JavaScript for real-world form validation.
Evaluation: Accuracy of validation logic, Correct handling of invalid inputs, Code structure and usability.

Case Study 2: Client-Side Cart Updates in BigBasket
Scenario: BigBasket updates cart totals instantly when the user changes product quantity without reloading the page.
Activity: Discuss how JavaScript DOM manipulation is used for updating totals. Create a simple product list with quantities and update total cost dynamically using JavaScript.
Outcome: Students will understand how JavaScript modifies the DOM in real-time.
Evaluation: Functionality of dynamic updates, Correctness of calculations, Neat interface

UNIT 5 – Bootstrap
Activity 1:
Case Study: Responsive Website for a Start-up
Scenario: A local bakery wants a responsive site using Bootstrap.
Task: Design a layout using Bootstrap grid, navbar, and carousel, Ensure the design adjusts for mobile and desktop.
Expected Outcome: Students will learn to create responsive layouts.
Evaluation: Correct application of Bootstrap components, Responsiveness.
Activity 2:
Case Study: Zomato UI Components
Scenario: Study Zomato's website UI elements.
Task: Identify Bootstrap-like components (cards, modals, navigation), Recreate one of these components using Bootstrap in a sample page.
Expected Outcome: Students will apply Bootstrap UI concepts.
Evaluation: Correct recreation of components, Visual similarity and functionality.

SEMESTER-II

COURSE 4: E-COMMERCE AND WEB APPLICATION DEVELOPMENT

Practical **Credits: 1** **2 hrs/week**

List of Experiments:
1. Create a simple HTML page with:Headings, paragraphs, bold/italic text
2. Create a music promotion webpage (include audio and video files in your html page)
3. Create an online registration form

4. Create Grocery Lists for an E-commerce Website (OL: Top 5 fruits in demand, UL: 5 vegetables, DL: Terms – Fruits, Vegetables, Beverages (with definitions))
5. Create a Blog Article with Text Formatting (sample tasks: Bold the title; Italicize author name; Highlight key points, Use subscript/superscript for scientific terms. highligth the important lines etc)
6. Create a static product gallery page that displays 4 product images in a grid layout (using HTML tables)
7. Create an interactive map using <map> and <area> tags where clicking on different areas navigates to different pages.
8. Demonstrate the usage of hyper links : intra hyperlinks, external and internal hyperlinks
9. Create a table with columns: Bus No, Route, Departure Time, Arrival Time for 5 buses.
10. Demonstrate the usage of iframes.
11. Demonstrate Layout Design Using CSS Box Model.
12. Demonstrate linking an external CSS file to style a multi-page college website.
13. Demonstrate Styling Text, Colors, and Backgrounds.
14. Demonstrate CSS animation on page elements(text,images etc)
15. Create a webpage to Design an image gallery page for an art exhibition.(Apply transitions and transforms for interactive effects like scale transform when an image is hovered- Rotate an image slightly when clicked- Smooth transitions for hover effects)
16. Create webpages demonstrating the usage of CSS Animations and transitions and transforms on images and text
17. Write a script to take two numbers as input and display their sum, difference, and product using a function.
18. Validate a registration form (check for empty fields, valid email, and password length).
19. Create a webpage that changes background color when a button is clicked and displays an alert when the page is loaded.
20. Create a web page with a list and buttons to Add, Remove, and Highlight list items dynamically using JavaScript DOM methods.
21. Display a live digital clock on a web page using JavaScript (updates every second).
22. Write a JavaScript program that greets the user with "Good Morning", "Good Afternoon", or "Good Evening" based on the current system time.
23. Create a product showcase slideshow for an e-commerce homepage using JAVA SCRIPT (Use onclick events for "Next" and "Previous" buttons to navigate).
24. Create a small price calculator for an e-commerce page to calculate the final price of a product after applying a discount/offers.
25. Create a navigation menu with hover effects for a website using CSS The top of the page should have a navigation bar with links:
    - Home
    - Products
    - Deals
    - About
    - Contact

    On hovering over these links, the color and background should change smoothly.

26. Create a featured products carousel for an online store homepage using Bootstrap.
27. Develop a responsive web-based virtual calculator interface using Bootstrap (Hint: Use Bootstrap Grid System and Components to create a calculator interface. Apply Bootstrap utilities for alignment, spacing, and button styling. Add basic functionality using JavaScript)
28. Mini Project: Build a single-page responsive portfolio combining HTML5, CSS, JavaScript, and Bootstrap: