ANDHRA KESARI UNIVERSITY ::ONGOLE

ModelSyllabusfor4-YearUGHonoursinB.Com.(ComputerApplications) as Major in consonance with Curriculum framework w.e.f. AY 2025-26

COURSESTRUCTURE

Year	Semester	Course	TitleoftheCourse	No.of Hrs /Week	No. of Credits
I	I	1	BusinessOrganizationand Management	4	4
		2	Fundamentals of Information Technology&OfficeAutomation	3	3
			Fundamentals of Information Technology&OfficeAutomation-Practical	2	1
	II	3	FinancialAccounting I	4	4
		4	E-CommerceandWebApplication and Development	3	3
			E-CommerceandWebApplication and Development -Practical	2	1
II	III	5	FinancialAccounting II	4	4
		6	BusinessStatistics	4	4
		7	DatabaseManagementSystem	3	3
			DatabaseManagementSystem- Practical	2	1
	IV	8	Advanced Accounting	4	4
		9	CostandManagementAccounting	4	4
		10	DataScienceusing Python	3	3
			DataScienceusing Python-Practical	2	1
III	V	11	CorporateAccounting	4	4
		12 A	Entrepreneurship&Start-Ups	4	4
			OR		
		12 B	BusinessIntelligencetoolsandData Visualisation	3	3

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Year	Semester	Course	TitleoftheCourse	No.of Hrs /Week	No. of Credits
			BusinessIntelligencetoolsandData Visualisation-Practical	**2**	**1**
		13 A	BusinessAnalyticsUsingExceland Power BI	**3**	**3**
			BusinessAnalyticsUsingExceland Power BI-Practical	**2**	**1**
		OR			
		13 B	AccountingInformationSystem	**3**	**3**
			AccountingInformationSystem-Practical	**2**	**1**
	VI	**14 A**	Auditing	**4**	**4**
		OR			
		14 B	FinancialInstitutionsand Markets	**4**	**4**
		15 A	Income Tax	**4**	**4**
		OR			
		15 B	FinancialPlanning	**4**	**4**
IV	**VII**	**16**	AccountingforServiceOrganizations	**4**	**4**
		17	IndianAccounting Standards	**4**	**4**
		18	GenerativeAIforthedevelopmentof Objective oriented Programmes, Systems and Applications	**3**	**3**
			GenerativeAIforthedevelopmentof Objective oriented Programmes, Systems and Applications-Practical	**2**	**1**
	VIII	**19**	AdvancedCostandManagement Accounting	**4**	**4**
		20	ForensicAccounting	**4**	**4**
		21	DesigningWebApplicationsusingAI tools	**3**	**3**
			DesigningWebApplicationsusingAI tools-Practical	**2**	**1**

Note: In the III Year (during the V and VI Semesters), students are required to select a pair of electives from one of the **Two** specified domains. **For example: if set 'A' is chosen, courses 12 to 15 to be chosen as 12 A, 13 A, 14 A and 15 A.**Toensurein-depthunderstandingandskilldevelopmentinthechosendomain, students must continue with the same domain electives in both the V and VI Semesters.

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SEMESTER-I

COURSE1:BUSINESSORGANIZATIONANDMANAGEMENT

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

Course Objectives

Thiscourseisdesignedto:

- Acquireconceptualknowledgeofbusinessandtheformationofvariousbusiness organizations;
- Provideinsightsintomergers,acquisitions,CSRpracticesandqualitymanagement concepts ;
- Developunderstandingofkeymanagementfunctions;
- Understandmotivationandleadershiptheories;and
- Understandlineandstaffrelationshipsandgaininsightsintothecontrolprocess.

CourseOutcomes(COs)

Uponsuccessful completionofthiscourse,studentswillbeableto:

CO1: Identify and differentiate various forms of business organisations including P4 models and franchising systems.
CO2:Analysetheimpactofbusinessenvironmentfactorslikemergers,acquisitions,andCSR on organisational sustainability.
CO3: Demonstrate knowledge of key managerial functions including planning, delegation, decision-making, and organisational structure.
CO4:Applymotivationandleadershiptheoriestoworkplacescenariosandassesstheir implications on employee performance.
CO5: Develop foundational skills in business analysis using tools such as SWOT, TQM, and quality circles.

SYLLABUS

Unit I: Business: Forms of Business Organization - Sole Proprietorship, Partnership, Joint Stock Companies & Co-operatives and their Characteristics, relative merits and demerits, Difference between Private and Public Company, Concept of One Person Company, Public-Private- People-Partnership Model (P4), Franchising, Business Chains.

UnitII:BusinessEnvironment:
Mergers and Acquisitions- Business Takeovers- Corporate Social Responsibility (CSR)- examples with reference to AP state, Concept of Quality-Total Quality Management (TQM)- 6 Sigma. Kizen, Quality Circles.

Unit III:Management:
Functions of Management- planning- SWOT analysis – Short-term & Long-term Planning- Decision Making- Delegation of authority- Decentralisation- Departmentation.

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UnitIV:Motivation:
Maslow's Need Hierarchy Theory- Theory X and Theory Y -McClelland's Need for AchievementTheory–Leadershipconcept-StylesofLeadership-Theoriesofleadership:Traits theory, Behavioural Leadership Theory, **Situational Leadership Theory**.

UnitV:Staffing
Line and staff relationship - Control: meaning and importance- process of control-control techniques- budgetary control.

Activities:

- Assignmentonbusinessorganizationsandmodern business.
- GroupDiscussiononfactorsthatinfluence plantlocation
- SeminarsondifferenttopicsrelatedtoBusinessorganization
- Casestudiesofsuccessfulcorporate/business heroes.

ReferenceBooks:

1. Gupta,C.B.(2014).*Businessorganisation*.MayurPublication.
2. Singh,B.P.,&Chhabra,T.N.(2014). *Anintroductiontobusinessorganisation& management*. Kitab Mahal.
3. Sherlekar,S.A.,&Sherlekar,V.S.(2000).*Modernbusinessorganization& management: Systems approach*. Himalaya Publishing House.
4. Bhushan,Y.K.(YearUnknown).*Businessorganization*.SultanChand&Sons. *(Pleaseinsert theyearif available.)*
5. Prakash, J. (Year Unknown). *Business organisation and management* (Hindi and English ed.). Kitab Mahal Publishers

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SEMESTER-I

COURSE 2: Fundamentals of Information Technology & Office Automation

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

Course Objectives:

1. **Understandfoundationalcomputingconcepts** includingnumbersystems,evolution of computers, and architectural components.
2. **Explorebasiccomputerorganizationandnetworkfundamentals**,recognizing device functions, system types, and internet components.
3. **Demonstrateproficiencyinwordprocessingandpresentationtools**,applying formatting techniques and design elements for professional outputs.
4. **Developcompetencyinspreadsheetoperations**,employingformulas,charts,and data-handling techniques.
5. **Apply advanced data modeling and productivity features** to analyze and visualize data efficiently using modern tools.

Course Outcomes:

Learnerswillbeableto:

1. **Convertbetweenbinary,decimal,octal,andhexadecimalsystems**,andexplain computer evolution and generations with examples.
2. Learnerswilldemonstrate**basicblocksofacomputerandfundamentalnetworking knowledge.**
3. Createprofessional-leveldocumentsand**designvisuallyappealingpresentations** usingwordprocessingsoftwareandpresentationsoftware.
4. Manipulatedatawithinspreadsheets,applyformulas,and**generateaccuratesummaries and visualizations.**
5. Applydatamodellingtechniquesto**analyze,organize,andrepresentdataeffectively** invariousscenarios.

Unit-INumberSystems,Evolution,BlockDiagramandGenerations
NumberSystems:Binary,Decimal,Octal,Hexadecimal;conversionsbetweennumbersystems.

EvolutionofComputers:Historyfromearlymechanicaldevicestomodern-daysystems.

Block Diagram of a Computer: Input Unit, Central Processing Unit, Memory Unit, Output Unit.

GenerationsofComputers:FirsttoFifthGeneration–Technologies,Characteristics, Examples.

Unit-IIBasicOrganizationandNetworkFundamentals
ComputerOrganization:Functionalcomponents:Input/Outputdevices,Storagetypes,Memory Hierarchy.

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TypesofComputers:Micro,Mini,Mainframe, andSupercomputers.

Networking Fundamentals: Definition, Need for Networks, **Key Components:** Nodes, Links, Protocols, Networking Devices. **Types of Computer Networks** : LAN, WAN, MAN.

NetworkTopologies: Bus.Ring,Star,Mesh..

Internet Basics: History, IP Address, URL, WWW, Web browsers, Search engines, E-mail, Internet Security.

Unit-IIIWordProcessingandPresentations

Word Processing Basics: Definition, Using Microsoft Word / Google Docs.Templates for resumes, letters, reports. **Basic text editing and formatting -** Typing and editing text, Font styles, sizes, colors, and effects, Paragraph alignment, indentation, and spacing, Bullets, numbering, and text highlighting, Templates for resumes, letters and reports. **Working with Tables and Graphics -** Inserting and formatting tables, Adding images, shapes, icons, and SmartArt, Text wrapping and positioning graphics.

Document Layout and Design - Page setup, Headers, footers, and page numbering, Section breaks and columns, Applying themes and styles. **Advanced Features -** Spell check and grammar tools, Thesaurus, and Mail merge. **References and Citations** Footnotes, endnotes, and captions, Bibliography and citation tools, Table of contents and index creation.

Presentation Tools: Using PowerPoint/Google Slides – Creating, Saving and Opening presentations,Adding,deleting,andrearrangingslides,Slidelayoutsanddesignthemes,Using templates and master slides, Slide sorter and outline view, Applying transitions and Animations, Design and Layout.

Applications:Creatingresumes,Reports,Brochures,and Presentations.

Unit-IVSpreadsheetBasics

Spreadsheet Concepts: Understanding rows, columns, cells in tools like MS Excel/Google Sheets, Workbook, Worksheet, **Cell referencing**- Relative, Absolute, Mixed.

FunctionsandFormulae:Mathematical,Statistical,Logical,Text,DateandTime,Financial.

LookupandReference:VLOOKUP,HLOOKUP,XLOOKUP,INDEX, MATCH

Visual representations: Creating a chart, common chart types, Column Chart, Bar Chart, Line Chart, Pie Chart, Scatter Chart, Histogram.

Data Handling: Sorting data, Filtering data, Grouping Data, **Conditional formatting:** Data Bars, Color Scales, Icon Sets, Custom Formulas.

Unit-VDataModelling

Data Analysis Tools: Pivot Tables and Pivot Charts, Data Validation (Drop-downs, Input Messages, Error Alerts), **What-If Analysis**: Goal Seek, Scenario Manager, Data Tables

ChartsandDashboards:CreatingInteractiveDashboards,UsingslicerswithPivotTables ,ComboChartsandSparklines.

ProductivityTips: UsingNamedRanges, Freeze Panes,SplitView.

TextBooks:

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1. **Thareja,R.**(Second Edition).*FundamentalsofComputers*.OxfordUniversityPress.
2. **Rajaraman,V.**(n.d.).*FundamentalsofComputers*.PHILearning.
3. **Norton,P.**(2017).*IntroductiontoComputers*(7thed.).McGrawHillEducation.
4. **Nordell,R.,Stewart,K.,Easton,A.,Graves,P.R.,&TriadInteractive,Inc.**(2022). *MicrosoftOffice365: InPractice*(1st ed.).NewYork:McGrawHill Education.

ReferencesBooks:

1. **Alexander,M.,&Kusleika,R.** (2022).*MicrosoftExcel365Bible*(2nded.).Wiley.
2. **Lowe,D.**(2021).*NetworkingAll-in-OneForDummies*(8thed.). Wiley.
3. **MicrosoftOfficialDocsandTraining**:https://learn.microsoft.com
4. **GoogleWorkspaceLearningCenter**:https://support.google.com/a/users/

Activities:

Unit1:NumberSystems&ComputerEvolution

Outcome: At the End of the Course, The Students will be able to **explain different number systems**, the historical evolution of computers, and identify key components in a block diagram.

Activity: Create a digital poster or infographic comparing number systems (binary, decimal, octal,hexadecimal)andillustratingthetimelineofcomputergenerationswithkeyinnovations.

Evaluation Method: Rubric-based assessment of the poster presentation on a 10-point scale focusing on:

- Accuracyofnumbersystem conversions
- Correctidentificationofblockdiagram components
- Visualorganizationand creativity

Unit2:ComputerArchitecture&NetworkingBasics

Outcome: Learnerswilldemonstrate**basicblocksofacomputerandfundamental networking knowledge.**

Activity: Design a concept map showing the internal architecture of a computer and types of networks (LAN, WAN, MAN), including devices and topologies.

EvaluationMethod: Checklist-basedpeerreviewandinstructorvalidation:

- Completenessofthemap
- Correctnessofnetworking concepts
- Useofappropriateterminology
- Logicalflowandstructureofthemap

Unit3:WordProcessing&PresentationDesign

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Outcome: Learners will create professional-level documents and **design visually appealing presentations** using word processing software and presentation software.

Activity: Prepare a formal report (e.g., project proposal) in a word processor and present itusing a slide deck with transitions, embedded media, and design elements.

EvaluationMethod: Performance-basedevaluationusinga10-pointscoring scale:

- Formattingandstructureofthe document
- Presentationaestheticsandclarity
- Communicationskillsduringpresentation

Unit4:SpreadsheetAnalysis&Visualization

Outcome: Learners will manipulate data within spreadsheets, apply formulas, and **generate accurate summaries and visualizations.**

Activity: Analyzeadataset(e.g.,studentscoresorsalesdata)usingspreadsheetsoftware. Apply formulas (SUM, AVERAGE, IF, VLOOKUP) and create relevant charts.

EvaluationMethod: Practicaltestwitharubric:

- Correctuseof formulas
- Accuracyofdatasummaries

Unit5:DataAnalysisandVisualization:

Outcome: Learnerswillapplydatamodellingtechniquesto**analyze,organize,andrepresent data effectively** in various scenarios.

Activity: Preparean interactivedashboardfor agivendata setusing EXCEL.

EvaluationMethod: Evaluationofthedashboardona10-pointscoringscale:

- Presentationaestheticsandclarity
- Interactiveness
- Communicationskillsduringpresentation

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SEMESTER-I

COURSE 2: Fundamentals of Information Technology & Office Automation Practical

Credits: 1 2hrs/week

List of Experiments:

1. DemonstrationofAssemblingandDessemblingofComputerSystems.
2. Identifyand preparenoteson thetypeofNetworktopologyofyourinstitution.
3. Prepareyour resumeinWord by usingthe Resume template.
4. UsingWord, write aletter toyourhigherofficialseeking 10-daysleave.
5. Createamulti-pageacademicreportandformatitusingheadersandfooters.Theheader will include the document title and author name, while the footer will contain page numbers and the date.
6. Prepare a formal invitation letter and use Mail Merge to personalize it for a list of recipients.
7. Prepare a report that includes: A table summarizing sales data, A graphic (image or chart) illustrating product performance with the proper formatting and alignment of both elements
8. Prepareadocumentand addCitations,Footnotes,andBibliographyinWord.
9. CreateaPowerPoint PresentationontheRoleofAIinBusinessDecision-Making.
10. Usingaspreadsheet,prepareyour classTimeTable.
11. Using a Spreadsheet, calculate the Gross and Net salary of employees(Min 5) considering all the allowances.
12. Generate the class-wise and subject-wise results for a class of 20 students. Also generate the highest and lowest marks in each subject.
13. UsingIF,AND,OR,andIFERRORtoAutomate Grade Evaluation.
    a. Createatableofstudentscoresindifferent subjects.
    b. UseIFtoassigngrades(A/B/C/Fail).
    c. UseIFERRORtohandlemissingscoresorinvaliddata.
14. Considertheproblemofpreparingastationaryorderforthemonthof March.Theitem description, quantity and cost per item are available. The total cost per item is to be calculatedandthefinalcostperiteminvolvesasalestaxof2%overthetotalcost.The gross total and the net total are to be displayed.

Sl. No.	Description	Quantity	CostPer Item
1	Notepad	202	2.85
2	WritingPad	86	3.95
3	Ballpointpen (Blue)	520	2.50
4	Cello-tape	75	2.95
5	A4Refillpad	90	5.95
6	Pencils	603	0.50
7	Crayons	80	3.85
8	Stapler	30	9.95

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9	Holepunch	25	14.95
10	Ring Binder	45	10.95

15. Youaregiventheorderdetailsofacompanyinthebelowtable.

OrderId	Product	Unit price	Quantity	Discount	Revenue	Tax(2%foreach order)	Net Income
11250	A	8	10	0%	?	?	?
11251	B	20.8	1	0%	?	?	?
11252	C	7.7	16	25%	?	?	?
11253	D	15.6	50	0%	?	?	?
11254	E	39.4	15	25%	?	?	?
				Total	?		?

a. Calculatetherevenueand tax ontherevenue foreach product.

b. Calculatethenetincome ofeach product.

c. Calculatethetotal revenueofall products.

d. Calculatethetotalnetincomeofall products.

16. CreateanExcelsheetwiththefollowingfieldsintheSales table.

i)Monthii)Itemiii)Quantityiv)Pricev)Commission Use

Data Validation criteria for:

a) Quantityand Priceshouldbewholenumbers

b) Commission@3.5%of Priceshould beallowed onlytwo decimals.

c) Priceshouldaccept 5000andabovevaluesonly.

17. Considertheproblemoffindingthetotalandaveragemarksoffivesubjectmarksforfive students. Calculate the Maximum mark, minimum mark, mean, median, Standard deviation and Variance for each subject.

Roll. No.	Name	Accounting	Income Tax	BusinessLaw	Total	Average
100	Ramesh	85	75	60	?	?
101	Mahesh	100	78	85	?	?
102	Suresh	65	72	70	?	?
103	Ravi	90	80	85	?	?
104	Raju	80	76	90	?	?

18. ThefollowingarethedetailsofExpenditure.DrawaPiediagramwithappropriate Formatting options, including Percentages and chart headings.

Product	Sales
Food	10000
Rent	5000
Clothing	1000
Fee	4000

19. The followingarethemarksobtainedbythestudentsofB.Com.Inthreesubjects.

Roll. No.	Name	Accounts	IT	Economics
2001	Ramesh	65	85	75
2009	Mahesh	88	75	60
2004	Suresh	67	84	35
2002	Ravi	42	85	74
2007	Raju	88	89	90

1. Sorttheabovetableon Roll.No.
2. UsingConditionalformattingListoutstudentswho scored
   a. Lessthan55inAccounts
   b. Morethan 75 inIT
   c. Between60and75in Economics.

20. PreparePivotTable forthegivendata:

Department	Employee Name	Salary
HR	Ramesh	20,000
Finance	Mahesh	18,500
IT	Suresh	17,500
HR	Ravi	13,000
Finance	Raju	15,000
IT	Balu	10,000

21. Employee DatabaseSearch Using VLOOKUP, HLOOKUP, XLOOKUP, INDEX, and MATCH

a. Create a database of

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employees(Name,ID,Department, Salary).

b. ImplementVLOOKUPtosearchby employeeID.
c. UseHLOOKUPtoextractdepartmentheadsbyrole.
d. ApplyXLOOKUPformoreflexible searches.
e. UseINDEX+MATCHasanalternativetoVLOOKUP.

22. SalesReportAnalysisUsingPivotTablesandCharts

a. Useadatasetofproductsales(Product,Region,Date,Quantity,Revenue).
b. CreatePivotTablestosummarizedataby region/product.
c. InsertPivotChartsforvisualanalysis(e.g.,bar,line).
d. Addslicersto makethedashboard interactive.

23. DesigningaDataEntryFormwithDrop-downsandInputRules

e. Createastudentregistrationform.
f. Adddrop-downlistsforcourseselectionusingDataValidation.
g. Addinputmessagestoguide users.
h. Adderroralertsforwrongentries.

24. MonthlyBudgetPlanningusingGoalSeekandScenarioManager

i. Createasimplepersonalbudget(income,expenses, savings).
j. UseGoal Seekto determine incomeneeded to saveadesired amount.
k. Use Scenario Manager to compare different budgeting scenarios (best/ worst/ realistic case).
l. Createaone-variableDataTabletoanalyzehowdifferentexpensesaffect savings.

25. Considerthemonthlysalesreport

Month	**Region**	**Product**	**Units Sold**	**Unit Price (₹)**	**Total Sales (₹)**
Jan-25	North	Laptop	120	50,000	60,00,000
Jan-25	South	Tablet	80	30,000	24,00,000
Feb-25	North	Laptop	150	50,000	75,00,000
Feb-25	South	Tablet	90	30,000	27,00,000
Mar-25	North	Laptop	100	50,000	50,00,000
Mar-25	South	Tablet	110	30,000	33,00,000

1. CreatePivotTables
2. Add Slicers
3. CreateComboChart
4. InsertSparklines
5. Assemble Dashboard

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.

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SEMESTER-II

COURSE3:FINANCIALACCOUNTINGI

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

Course Objectives

Thiscourseisdesignedto:Understandandexplainthefoundationalprinciples,concepts,andprocessof 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
- Prepareaccuratefinalaccounts(Trading,Profit&Loss,andBalanceSheet) incorporating necessary adjustments.

CourseOutcomes(COs)

Uponsuccessful completionofthiscourse,studentswillbeable:to
CO1:Understandthebasicconceptsof financialaccounting;
CO2:Analysethe accounting process;
CO3:Enablethestudentstounderstandthevariousmethodsofdepreciationanditscalculation;
CO4:Examinetheimpactofprovisionsandreservesonprofitabilityofbusiness;
CO4:Workoutwithfinalaccountsandassessthefinancialpositionoftheconcern.

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:AccountingProcess

Journal–Ledger–SubsidiaryBooks-Single,DoubleandthreeColumnCashBook-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:Provisionsand 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

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(Including Problems)

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Activities

- Quizonaccountingprinciples,concepts,and classificationof accounts.
- Assignmentonclassificationofaccountsandjournalentries.
- Groupactivity:calculationofproblemsondepreciationusingdifferent methods.
- ComparativepresentationofDepreciationandAmortisation.
- Field-basedreport:Collectandanalysefinalaccountsofalocalbusiness.

References:

1. Ranganatham,G.,&Venkataramanaiah,M.(2019).*Financialaccounting*.New Delhi: S. Chand Publications.
2. Jain,S.P.,&Narang,K.L.(n.d.).*Accountancy*.Ludhiana:KalyaniPublishers.
3. Arulanandam,M.A.(n.d.).*Advancedaccountancy*.Mumbai:HimalayaPublishing House.
4. Goyal,V.K.(n.d.).*Financialaccounting*.NewDelhi:ExcelBooks.
5. Tulsian,P.C.(n.d.).*Accountancy–I*.NewDelhi:TataMcGrawHillPublishing Co.

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SEMESTER-II

COURSE4:E-COMMERCEANDWEBAPPLICATION DEVELOPMENT

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

Course Objectives:

1. Understandtheevolution,types,andmodelsofe-commerce,includingtechnical,legal, and ethical frameworks. Explore web design technologies and content management systems relevant to e-commerce platforms.
2. Applyonlinemarketingprinciples,SEOtechniques,ande-paymentsystemswith attention to logistics and risk management.
3. DesigninteractiveandresponsivewebsitesusingHTML5,CSS3,andclient-side scripting with JavaScript.
4. DevelopandcustomizeCMS-basedinterfacesusingtheBootstrapframeworkand responsive design principles.

Course Outcomes:

Learnerswillbeableto:

1. Describe e-commerce models, revenue strategies, and legal considerations including cyber laws and data privacy.
2. ImplementbasicwebstructuresusingHTML5andapplywebdesignprinciplessuitable for digital commerce.
3. CreateandstyledynamicwebsitesusingCSSforlayout,animation,andvisualenhancements.
4. Write client-side scripts using JavaScript to enable interactivity, form validation, and event handling.
5. Buildresponsivee-commercefront-endsusingtheBootstrapframework,incorporating reusable UI components and custom styling.

UNIT-I

IntroductiontoE-Commerce:Definition,scope,andevolution,Benefitsandlimitations Types of E-Commerce: B2B, B2C, C2C, C2B, G2C models
E-CommerceBusinessModels:Revenuemodels(advertising,subscription,etc.)
Infrastructure for E-Commerce : Internet, intranet, Extranet
PaymentgatewaysanddigitalwalletsLegalandEthicalIssues:Cyberlawsanddata privacy,Intellectual property, taxation, and security.
Casestudy: Studyofsuccessful e-businesses

UNIT-II

TechnologyinE-Commerce:Essentialsof webdesignfor business-Contentmanagement 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 FundTransfer(EFT),PaymentGateways–BlockchainandCryptocurrencies,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.

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UNITIII:CascadingStyleSheets

CSSBasics:CSSRule,ApplyingCSSRules(Selectors),EmbeddingCSScodeinHTMLpage 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.

UNITIV:ClientSideScriptingusingJAVA SCRIPT

JavascriptBasics:Datatypes,Variables,Operators,ControlStatements,Functions. Builtin Objects: Arrays, String, Date, Window, Document, RegEx.DocumentObjectModelling:IntroductiontoDOM,FormValidationusingJavaScript, Event Handling: Mouse events, form submission events, load and unload events, keyboard events – focus and blur events.

UNITV:BOOTSTRAPFRAMEWORKfordesigningCMS

Responsive Webdesign: Grid System, Breakpoints, Containers, Utilities. IntroductiontoBOOTSTRAPFRAMEWORK: Benefits,SetupBootstrapProject.

BootStrap Components: Navigation, Creating navigation bars (.navbar), Dropdowns, and Responsive togglers. Buttons-Styling buttons with various classes for size, color, and state. Forms-Stylingformelementslikeinputs,labels,andclientsidevalidation.Carousels-Creating image sliders. Alerts: Displaying informative messages

Customization:OverridingBootstrap'sdefaultstylesusingcustom CSS

TEXTBOOKS&REFERENCE BOOKS

1. Whiteley, D., 2000. *E-commerce: Strategy, technologies and applications*. McGraw-Hill Education.
2. Turban,Efraim,DavidKing,JaeKyuLee,Ting-PengLiang,andDeborrahTurban. *ElectronicCommerce:Concepts,Models, Strategies*.PearsonEducation, 2002.
3. Robbins,JenniferNiederst.*LearningWebDesign:ABeginner'sGuidetoHTML,CSS, JavaScript,andWebGraphics*.5thed.,O'ReillyMedia,2018.
4. KogentLearningSolutionsInc.*WebTechnologiesBlackBook*.DreamtechPress,2009.
5. Diwan, Amit. *Ultimate Bootstrap for Responsive Web Design*. Orange Education Pvt. Ltd., 2024. ISBN: 9789348107251.
6. Hussain,Frahaan,andKameronHussain.*MasteringBootstrap5:FromBasicsto Expert Projects*. Sonar Publishing, 2023. ISBN: B0CPW9PRVT.

E-Resources

1. NPTEL/SWAYAMOnlineLectures::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/

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ACTIVITIES

UNIT 1 – Introduction to E-Commerce

Activity1:CaseStudy–Amazon'sGrowthStory
Scenario:
StudentsanalyzehowAmazonevolvedfromanonlinebookstoretoaglobale-commerce leader.
Task:Identify Amazon's e-commerce model (B2C) and revenue models, List benefits and limitations faced during its evolution.
ExpectedOutcome:Studentswillunderstandtheevolutionofe-commerceandbusiness models.
Evaluation:Accuracyofmodelidentification,Depthofanalysis,Qualityofpresentation. Activity 2: Case Study – Paytm and Digital Payments in India
Scenario:
ExaminePaytm'sroleinenablingdigitalwalletsandonlinetransactionsinIndia. 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 ofpayment gateway functions, Identification oflegal/ethical issues.

UNIT 2 – Technology in E-Commerce

Activity1:CaseStudy–ShopifyWebsites
Scenario:
StudentsexploreShopify-basedsmallbusinesssites.
Task:AnalyzefeaturesofaShopifystore(design,responsiveness,content),Suggest3 improvements for better customer experience.
ExpectedOutcome:
Students will understand CMS tools and good design practices.
Evaluation:Relevanceofsuggestedimprovements,Clarityofanalysis.

UNIT3– CSS

Activity1:CaseStudy–HomepageRedesign(FLIPKART) Scenario:
FlipkartwantstorevampitshomepagewithmodernCSStechniques.
Task:SuggestCSSimprovements(colorscheme,boxmodelusage),Implementoneofthese changes in a sample HTML page.
ExpectedOutcome:StudentswillapplyCSSpropertiesforreal-worldUIimprovement. Evaluation: Creativity of suggestions, Correctness of CSS code.

Activity2:CaseStudy –NetflixInterface Styling
Scenario:AnalyzeNetflix'swebinterfaceforuser experience.
Task:Identify5CSStechniquesused(hovereffects,transitions,grids).Replicateoneeffect in a simple web page.
ExpectedOutcome:StudentswillrecognizemodernCSSpractices.
Evaluation:Correctidentificationoftechniques,Workingreplicationofaneffect.

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Unit4–Client-SideScripting

CaseStudy1: FormValidationin IRCTCBooking Portal

Scenario: IRCTC uses JavaScript to validate passengerdetails (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, Implementasimpleform(name,email,age,traveldate)andaddJavaScriptvalidationforeach 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.

CaseStudy2:Client-SideCartUpdatesinBigBasket

Scenario:BigBasketupdatescarttotalsinstantlywhentheuserchangesproductquantity without reloading the page.

Activity:DiscusshowJavaScriptDOMmanipulationisusedforupdatingtotals.Createa 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:Functionalityofdynamicupdates,Correctnessofcalculations,Neatinterface

UNIT5– Bootstrap

Activity1:

CaseStudy:ResponsiveWebsiteforaStart-up

Scenario:Alocalbakery wantsaresponsivesiteusing Bootstrap.

Task:DesignalayoutusingBootstrapgrid,navbar,andcarousel,Ensurethedesignadjusts for mobile and desktop.

Expected Outcome: Students will learn to create responsive layouts.

Evaluation:CorrectapplicationofBootstrapcomponents,Responsiveness.

Activity 2:

CaseStudy: ZomatoUIComponents

Scenario:StudyZomato'swebsiteUIelements.

Task:IdentifyBootstrap-likecomponents(cards,modals,navigation),Recreateoneofthese components using Bootstrap in a sample page.

ExpectedOutcome:StudentswillapplyBootstrapUIconcepts.

Evaluation:Correctrecreationofcomponents,Visualsimilarityandfunctionality.

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SEMESTER-II

COURSE4:E-COMMERCEANDWEBAPPLICATION DEVELOPMENT

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

List of Experiments:

1. CreateasimpleHTMLpagewith:Headings,paragraphs,bold/italic text
2. Createamusicpromotion webpage(includeaudioand videofilesinyourhtml page)
3. Createanonlineregistrationform
4. CreateGroceryListsforan E-commerceWebsite(OL:Top 5fruitsindemand, UL: 5 vegetables, DL: Terms – Fruits, Vegetables, Beverages (with definitions))
5. Create a Blog Article with Text Formatting (sample tasks: Bold the title; Italicize authorname;Highlightkeypoints,Usesubscript/superscriptforscientificterms.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 interactivemap using <map> and <area> tags where clicking on different areas navigates to different pages.
8. Demonstratetheusageofhyperlinks:intrahyperlinks,externalandinternalhyperlinks
9. Createatablewithcolumns:BusNo,Route,DepartureTime,ArrivalTimefor5buses.
10. Demonstratetheusageofiframes.
11. DemonstrateLayout DesignUsingCSSBoxModel.
12. DemonstratelinkinganexternalCSSfiletostyleamulti-pagecollege website.
13. DemonstrateStylingText,Colors,and Backgrounds.
14. DemonstrateCSSanimationonpageelements(text,imagesetc)
15. Create a webpage toDesign 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. Validatearegistrationform(checkforemptyfields,validemail,andpasswordlength).
19. Createawebpagethatchangesbackgroundcolorwhenabuttonisclickedanddisplays 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. Displayalivedigitalclockon aweb pageusingJavaScript (updates every second).
22. Write a JavaScript program that greets the user with "Good Morning", "Good

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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

Onhoveringovertheselinks,thecolorandbackgroundshouldchangesmoothly.

26. CreateafeaturedproductscarouselforanonlinestorehomepageusingBootstrap.

27. Develop a responsive web-based virtual calculator interface using Bootstrap(Hint: UseBootstrap Grid System and Components to create acalculator 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:

- Sections:Home,About,Projects,Contact
- Responsive layout
- Bootstrapcomponents(navbar,carousel,buttons)

Note:Thelistofexperimentsisnotlimitedtothosementionedabove.Acomprehensivesetof programming or software tool-based exercises may be developed by the respective faculty members.

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