



College of Excellence, **nirf** 2023 - 4th Rank
Autonomous and Affiliated to Bharathiar University
Reaccredited with A⁺⁺ grade by NAAC, An ISO 9001:2015 Certified Institution
Peelamedu, Coimbatore - 641004

DEPARTMENT OF B COM (BUSINESS ANALYTICS)

CHOICE BASED CREDIT SYSTEM (CBCS) & LEARNING OUTCOMES BASED CURRICULAR FRAMEWORK (LOCF)

(SEMESTER – I, II & III)

BACHELOR OF COMMERCE WITH BUSINESS ANALYTICS

2023 – 2026 BATCH



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PROGRAMME LEARNING OUTCOMES (PLO's)

After completion of the programme, the student will be able to

PLO1: Exhibit conceptual and procedural foundations of business analytical methods and techniques integrated with disciplines such as commerce, mathematics, statistics, management, economics and computer science.

PLO2: Understand data science and its role of descriptive, predictive and prescriptive analytics using data mining techniques in problem solving and decision making that is imperative for business organizations.

PLO3: Inculcate programming knowledge and ability to explore Big Data technologies, and algorithms for data visualization and data inference of different industries.

PLO4: Apply appropriate analytic tools and techniques to resolve complex business analytical problems in various industry sectors and domains with hands on experience in relevant software.

PLO5: Identify and resolve practically relevant business analytic tools to handle data based on diversified commerce conjecture to build and sustain a competitive advantage by expanding analytics capabilities for successful career.

PROGRAMME SPECIFIC OUTCOME (PSO's)

The students at the time of graduation will

PSO1: To Provide Hands-on learning of leading analytical tools.

PSO2: To acquire theoretical knowledge of data science tools, but will also gain exposure to business perspectives.

PSO3: To provide perfect blend of analytical skills and business knowledge to excel as business analyst.

**DEPARTMENT OF B COM (BUSINESS ANALYTICS)
CHOICE BASED CREDIT SYSTEM (CBCS) & LEARNING OUTCOMES BASED CURRICULAR
FRAMEWORK (LOCF) BACHELOR OF COMMERCE WITH BUSINESS ANALYTICS – 2023-2026 BATCH**

Programme & Branch: B Com (Business Analytics)													
Scheme of Examination (Applicable to students admitted during the academic year 2023- 2024 onwards)													
Semester	Part	Subject Code	Title of the Paper	Instruction hrs/ week	Course Type	Instruction hrs	Tutorial hrs	Examination	Examination marks				
									CIA	ESE	Total	Credits	
I	I	TAM2301A/ HIN2301A/ FRE2301A	Tamil Paper I/ Hindi Paper I/ French Paper I	4	Language	58	2	3	25	75	100	3	
	II	ENG2301A	English Paper I	4	English	58	2	3	25	75	100	3	
	III			Group A – Core									
			CM23C01	Principles of Accounting	5	CC	73	2	3	25	75	100	4
			DA23C02	Fundamentals of Business Analytics	5	CC	73	2	3	25	75	100	3
			TH23A15	Allied - Statistics I	6	GE	88	2	3	25	75	100	4
			DA23CP1	Computer Application Practical I - Analysis with Excel	4	CC	57	3	3	50	50	50*	2
	IV			Non Tamil Students									
			NME23B1	Basic Tamil I	2	AECC	30	-	-	100	-	100	2
			NME23A1	Advanced Tamil I	2		30	-	-	100	-	100	
				Students with Tamil as Language									
			NME23ES	Introduction to Entrepreneurship	2		30	-	-	100	-	100	
II	I	TAM2302A/ HIN2302A/ FRE2302A	Language – Tamil / Hindi / French Paper II	4	Language	58	2	3	25	75	100	3	
	II	ENG2302A	English Paper II	4	English	58	2	3	25	75	100	3	
	III		DA23C03	Paper III - R Programming	5	CC	73	2	3	25	75	100	4
			CM23C04	Paper IV – Financial Accounting	5	CC	73	2	3	25	75	100	3
			TH23A16	Allied - Statistics II	6	GE	88	2	3	25	75	100	4
			DA23CP2	Computer Application Practical II-Analysis with Statistical Package & R	4	CC	57	3	3	25	75	50*	2

	IV	Non-Tamil Students											
		NME23B2	Basic Tamil II- Outside regular class hours	-	AECC	28	2	-	100	-	100	Gr	
		NME23A2	Advanced Tamil II- Outside regular class hours	-		28	2	-	100	-	100		
			Open Course Self Study - Online course	-	-	-	-	-	-	-	-		
	V	23PECM1	Professional English for Commerce and Management	2	AECC	40	5	5	100	-	100	2	
	VI		Personality Development Programme	-	-	-	-	-	-	-	-	-	
	III B	NM23GAW	General awareness	-	Self-Study	-	1	-	-	-	100	Gr	
III	I	TAM2303A/ HIN2303A/ FRE2303A	Tamil paper III/ Hindi paper III/ French paper III	4	L	58	2	3	25	75	100	3	
	II	ENG2303A	English Paper III	4	E	58	2	3	25	75	100	3	
	III		BP23C05	Digital Marketing	5	CC	73	2	3	25	75	100	4
			DA23C06	Database Programming	4	CC	58	2	3	25	75	100	3
			BP23A01/ AF23A02/ DA23A03	Business Management and Ethics / Business Economics/ Corporate Governance	5	GE	73	2	3	25	75	100	4
			DA23CP3	Database programming Practical	3	CC	45	-	3	15	35	50*	2
			DA23SCE1/ CS23SBGP	Skill Based Subject I – Data Science and Statistics/GEN AI	3	SEC	45/ 44	-/1	-	100	-	100	3
		NM23DTG	Design Thinking	2	AEC	30	-	-	100	-	100	2	
IV	NM22UHR	Universal Human Values and Human Rights #	-	AECC	-	-	-	100	-	100	Gr		
I-V	VI	16BONL1	Online Course I	-									
		16BONL2	Online Course II	-	ACC	-	-	-	-	-	-	-	

CC – Core Courses

CA – Continuous Assessment

GE – Generic Elective

ESE - End Semester

Examination AECC – Ability Enhancing Compulsory Course SEC –Skill Enhancing Course

*Credits applicable to candidates who take up Advanced level course examination

* Outside regular class hours

*100 marks converted to 50

Examination System

One test for continuous assessment will be conducted on pre-determined dates i.e., commencing on the 50th day from the date of reopening. The Model exam will be conducted after completing 85th working days. Marks for ESE and CA with reference to the maximum for the courses will be as follows

2023-2024 Batch onwards

CA Question Paper Pattern and distribution of marks UGLanguage and English

Section A	5 x 1 (No choice)	:	5 Marks
Section B	4 x 5 (4 out of 6)	:	20 Marks (250 words)
Section C	2 x 10 (2 out of 3)	:	20 Marks (500 words)
	Total	:	45

Marks UG- Core and Allied - (First 3 Units)

CA Question from each unit comprising of

One question with a weightage of 2 Marks: 2 x 3 = 6

One question with a weightage of 5 Marks (Internal Choice at the same CLO level): 5 x 3 =15

One question with a weightage of 8 Marks (Internal Choice at the same CLO level): 8 x 3 =24

Total: 45 Marks

End Semester Examination – Question Paper Pattern and Distribution of Marks

Language and English – UG

Section A	10 x 1 (10 out of 12)	:	10 Marks
Section B	5 x 5 (5 out of 7)	:	25 Marks (250 words)
Section C	4 x 10 (4 out of 6)	:	40 Marks (600 - 700 words)
	Total	:	75 Marks

UG - Core and Allied courses:

ESE Question Paper Pattern: 5 x 15 = 75 Marks

Question from each unit comprising of

One question with a weightage of 2 Marks: 2 x 5=10

One question with a weightage of 5 Marks (Internal Choice at the same CLO level): 5 x 5 =25

One question with a weightage of 8 Marks (Internal Choice at the same CLO level): 8 x 5 =40

ESE Question Paper Pattern :(for Accounts Paper) 5 x 15 = 75 Marks

Question from each unit comprising of

One question with a weightage of 2 Marks : 2 x 5=10

One question with a weightage of 5 Marks : 5 x 5 =25

One question with a weightage of 8 Marks (Internal Choice at the same CLO level) : 8 x 5 =40

Continuous Internal Assessment Pattern

Theory

I Year UG (23 Batch)

CIA Test	:	5 marks (conducted for 45 marks after 50 days)
Model Exam	:	7 marks (Conducted for 75 marks after 85 days (Each Unit 15 Marks))
Seminar/Assignment/Quiz:	5 marks	Class
Participation	:	5 marks
Attendance	:	3 marks
Total	:	25 Marks

Part IV

Introduction to Entrepreneurship / Women Studies / Value education / Environmental Studies / Design Thinking

Quiz	:	50 marks
Assignment	:	25marks
Project / Case study	:	25 marks
Total	:	100 Marks

Professional English

The course offered in alignment with TANSICHE norms with 2 credits.

Quiz (5 x 20 Marks) : 100 Marks

MAPPING OF PLOs WITH CLOs

COURSE	PROGRAMME OUTCOMES				
	PLO1	PLO2	PLO3	PLO4	PLO5
COURSE – CM23C01					
CLO1	S	M	S	M	S
CLO2	S	M	S	M	M
CLO3	S	M	M	M	M
CLO4	S	M	S	M	S
COURSE – DA23C02					
CLO1	S	S	M	S	M
CLO2	S	S	L	S	S
CLO3	M	M	S	S	M
CLO4	S	L	M	S	S
COURSE – DA23CP1					
CLO1	S	M	L	L	M
CLO2	S	S	S	S	S
CLO3	S	S	M	M	S
CLO4	S	M	M	L	S
COURSE – DA23C03					
CLO1	S	S	M	S	S
CLO2	S	M	S	S	M
CLO3	M	S	S	M	M
CLO4	S	M	S	S	M
COURSE – CM23C04					
CLO1	S	S	M	M	S
CLO2	S	S	M	M	S
CLO3	S	S	S	S	M
CLO4	S	S	S	S	M
COURSE – DA23CP2					
CLO1	S	S	L	M	M
CLO2	S	M	M	S	M
CLO3	S	M	L	M	S
CLO4	S	L	L	S	M

CM23C01	PRINCIPLES OF ACCOUNTING	Category	L	T	P	Credit
		Theory	73	2	-	4

Preamble

- To enable the students to apply the conceptual principles and to develop an expertise in handling accounts of business entities and the consolidation of accounts through appropriate accounting techniques and policies.

Prerequisite

- Basic Knowledge in Financial Statements

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	Define the concepts and conventions in accounting	K1
CLO2	Interpret accounting statement using basic concepts.	K2
CLO3	Apply the procedures of recording transactions and preparation of Reports.	K3
CLO4	Articulate the accounting concepts to interpret the performance of a Firm.	K4

Mapping with Programme Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	M	S	M	S
CLO2	S	M	S	M	M
CLO3	S	M	M	M	M
CLO4	S	M	S	M	S

S- Strong; M-Medium; L-Low

Syllabus

Unit I (14 Hrs)

Basic Accounting Concepts (AS-1) - Rectification of errors - Final Accounts - Bank Reconciliation Statement.

Unit II (14 Hrs)

Average due date - Bills of exchange (trade bills only) - Joint Venture (AS-27).

Unit III (15 Hrs)

Departmental Accounts - Basis for allocation of expenses. Branch Accounts (Dependent Branches - Debtors and Stock & Debtors System - Independent Branches only)

Unit IV (15 Hrs)

Hire purchase Accounts: Default and Repossession - Hire purchase Trading Account - Installment purchase system.

Unit V (15 Hrs)

Depreciation (excluding change in method of depreciation) - Investment Account (AS-13).

Text Book

S.No.	Authors	Title	Publishers	Year of Publication
1.	Reddy T S & A Murthy	Financial Accounting	Margham Publications	Reprint 2021

Reference Books

S.No.	Authors	Title	Publishers	Year of Publication
1.	RL Gupta & Radhasamy	Advanced Accountancy (Vol I)	Sultan Chand & Sons.	2018, 13 th ed.
2.	Jain S.P & Narang K.L	Principles of Accountancy	Kalyani Publishers	2018
3.	MC Shukla, T.S. Grewal & S.C. Gupta	Advanced Accountancy	S. Chand & sons	2016

Skill Components

- Identifying concepts and conventions adopted by a firm in their financial statement. Prepare a Bank Reconciliation Statement for the business concern.
- Study a firm's financial statement and present a report on the accounting policies followed
- To calculate the due date and amount on discounting of bills for a firm.
- Analyzing the financial statement of a hire purchase company and present a report on the collection system.
- Analyse the treatment of depreciation for different firms.

Pedagogy

- Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

Course Designers

1. Dr. S. Sujatha, Department of Commerce
2. Dr. G. Indrani, Department of Commerce

DA23C02	FUNDAMENTALS OF BUSINESS ANALYTICS	CATEGORY	L	T	P	CREDIT
		THEORY	73	2	-	4

Preamble

- To achieve and establish vital understanding of big data application in business intelligence
- To institute the concept of systematic transformation of process-oriented data into information of the underlying business process
- To exhibit knowledge of data analysis techniques and to apply principles of data science integrating enterprise reporting

Prerequisite

- Basic knowledge in computers

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	To define and understand the importance of business analytics and data science in business process and industry	K1
CLO2	To outline data integration, projecting, maintenance, designing and modeling of various data techniques	K2
CLO3	To identify the concepts of data warehouse, data profiling, data dimension, mobility and various related systems and their applications in different industries	K3
CLO4	To analyse the business views using IT applications, its purpose and analysing various concepts relating to it and inculcate problem solving and decision-making skills	K4

Mapping with Programme Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	M	S	M
CLO2	S	S	L	S	S
CLO3	M	M	S	S	M
CLO4	S	L	M	S	S

S- Strong; M-Medium; L-Low

Syllabus

Unit I (16 Hrs)

Introduction to the BA Role : Business Analysis -Business Analyst - The evolving role of the Business Analyst - The BA roadmap: different levels of business analysis - The basic rules of Business & Business Analysis - Classical Requirements and Tasks performed by Business Analysts. Project Definition and Scoping: Aspects - Projects phases - Project approaches (Waterfall, Agile, Iterative, Incremental) - The role of the BA across the project lifecycle.

Unit II (15 Hrs)

Business view of Information Technology Applications: Core business process – Baldrige Business Excellence framework - Key purpose of using IT in business - Internet-ready IT Applications - Technology Centric Applications - Enterprise Applications - Information users and their requirements. Data Definition: Types of Data – Attributes and Measurement –

Types of data sets – Data quality – Types of Digital Data – Characteristics – Storage and extraction process

Unit III (16 Hrs)

Introduction to OLTP and OLAP – OLTP – Transaction – Segmentation - OLAP – Different OLAP Architectures – OLTP and OLAP – Data models for OLTP and OLAP – Role of OLAP Tools in BI Architecture. Business Intelligence – Business Intelligence defined – Evolution of BI and Role of DSS, EIS, MIS and Digital Dashboards – Need for BI – BI valuechain – Introduction to Business Analytics - Business Intelligence versus Business Analytics. BI Definitions and Concepts – BI Component Framework – Need for BI – BI Users – Business Intelligence applications – BI roles and responsibilities – BI tools.

Unit IV (16 Hrs)

Data Integration – Data Warehouse – Goals – Data sources – Extract, Transform and Load – Stages in ETL – ETL tools - Data Integration - Challenges – Technologies – Approaches - Data Quality maintenance – Data profiling. Data Modeling – Basics – Types – Techniques – Fact table – Dimension Table – Typical Dimensional Models – Dimensional modeling life cycle – Designing the Dimensional Model. BI in Real world – BI and mobility – BI and cloud computing – BI for ERP systems – Social CRM and BI.

Unit V (10 Hrs)

Introduction to Industry 4.0- Need – Reasons for Adopting Industry 4.0 - Definition – Goals and Design Principles - Technologies of Industry 4.0- Skills required for Industry 4.0 - Advancements in Industry 4.0 – Impact of Industry 4.0 on Society, Business, Government and People - Introduction to 5.0

Text Books

S.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	R.N.Prasad and Seema Acharya	Fundamentals of Business Analytics	Wiley	2016, 2 nd Edition
2.	P.Kaliraj and Dr.T.Devi	Higher Education for Industry 4.0 and Transformation to Education 5.0	Bharathiar University	2020

Reference Books

S. No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Haydn Thomas –Demonoid	Business Analysis Fundamentals	Pearson Education	2015, Revised Edition
2	Pang-Ning Tan Michael Steinbach, Vipin Kumar	Introduction to Data Mining	Pearson Education	2021, 2 nd Edition

Related Online Contents

- Fundamentals of Business Analytics-RN Prasad. Global edition: Second Edition
- Business Analytics-James R Evans. Second edition-Wiley

Skill Components

- Determine the concepts of business analytics and business processes.
- Analyzing the techniques of integration and modeling.
- Analyze the concept of data warehouse, OLTP, OLAP.
- Understand KPI and measures to apply in a business.
- Forecast on business intelligence concepts for enterprise reporting.

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

Course Designers

1. Dr. M. Rajeswari
2. Dr. S. Krishnaveni

DA23CP1	COMPUTER APPLICATION PRACTICAL I - ANALYSIS WITH EXCEL	CATEGORY	L	T	P	CREDIT
		PRACTICAL	-	3	57	1

Preamble

- To calculate the knowledge of MS Excel
- To understand the basic statistics tools & methods

Prerequisite

- No prerequisite required

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	To understand and find commands in Excel, Get an head start with templates and setup an Excel template,	K1
CLO2	Demonstrate the excel data model and connect to external data and Use advance techniques for report visualization.	K2
CLO3	Discuss on statistical operation and tools used in Excel and Documentation and review tools	K3
CLO4	Illustrate on basic analytical tools and Application of financial functions	K4

Mapping with Program Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	M	L	L	M
CLO2	S	S	S	S	S
CLO3	S	S	M	M	S
CLO4	S	M	M	L	S

S-Strong; M-Medium; L-Low

Syllabus

1. Create an MS Excel worksheet to illustrate sorting function.

2. Suppose that at the beginning of May 2012 you purchased shares in Apple, Inc. (Nasdaq: AAPL). It is now five years later and you decide to evaluate your holdings to see if you have done well with this investment. The table below shows the market prices of AAPL.

DATE	PRICE
2018	59.77
2013	121.19
2014	188.75
2015	135.81
2016	256.88
2017	337.41

- Enter the data, as shown, into a work sheet and format the table as shown.
- Create a formula to calculate rate of return for each year. Format the results as percentages with two decimal places.
- Calculate the total return for the entire holding period. What is the compound average annual rate of return?
- Create a Line chart showing the stock price from May 2006 to May 2011. Make sure to title the chart and label the axes. Now, create an XY Scatter chart of the same data. What are the differences between these types of charts? Which type of chart is more appropriate for this data?
- Experiment with the formatting possibilities of the chart. For example, you might try changing it to a 3-D Line chart and fill the plot area with a marble background. Is there any reason to use this type of chart to display this data? Do the “enhancements” help you to understand the data?

3. In your position as research assistant to a portfolio manager, you need to analyze the profitability of the companies in the portfolio. Using the data for Chevron Corporation below:

FISCAL YEAR	2017	2016	2015	2014	2013
TOTAL REVENUE	1,98,198	1,71,636	2,64,958	2,20,904	2,04,892
NET INCOME	19,024	10,483	23,931	18,688	17,138

- Calculate the net profit margin for each year.
- Calculate the average annual growth rates for revenue and net income using the **GEOMEAN** function. Is net income growing more slowly or faster than total revenue? Is this a positive for your investment in the company?
- Calculate the average annual growth rate of total revenue using the **AVERAGE** function. Is this result more or less accurate than your result in the previous question? Why?
- Create a Column chart of total revenue and net income. Be sure to change the chart so that the x-axis labels contain the year numbers, and format the axis so that 2017 is on the far right side of the axis.

4. Repeat Problem 2 using the data below for Qualcomm Inc. However, this time you should create a copy of your worksheet to use as a template. Replace the data for Chevron with that of Qualcomm.

FISCAL YEAR	2017	2016	2015	2014	2013
TOTAL REVENUE	10,991	10,416	11,142	8,871	7,526
NET INCOME	3,247	1,592	3,160	3,303	2,470

e) Do you think that Qualcomm can maintain the current growth rates of sales and net income over the long run? Why or why not?

f) Which company was more profitable in 2010? Which was more profitable if you take a longer view? Would this affect your desire to invest in one company over the other?

5. Using the data for Paychex, Inc. (Nasdaq: PAYX), presented below:

FISCAL YEAR	2017	2016	2015	2014	2013
SALES	\$2000.82	\$2082.76	\$2066.32	\$1886.96	\$1674.60
EBIT	729.31	812.08	854.82	743.27	674.77
TOTAL NET INCOME	477.00	533.54	576.14	515.45	464.91
DIVIDENDS PER SHARE	1.24	1.24	1.22	1.02	0.69
BASIC EPS FROM TOTAL OPERATIONS	1.32	1.48	1.56	1.35	1.23
TOTAL ASSETS	5,226.30	5,127.42	5,309.79	6,246.52	5,549.30
ACCOUNTS PAYABLE	37.3	37.33	40.25	46.96	46.67
TOTAL LIABILITIES	3,824.32	3,785.94	4,113.15	4,294.27	3,894.46
RETAINED EARNINGS	856.29	829.50	745.35	1,595.10	1,380.97
NET CASH FROM OPERATING ACTIVITIES	610.92	688.77	724.67	631.23	569.23

g) Calculate the ratio of each year's data to the previous year for each of the above items for Paychex, Inc. For example, for the year 2010, the ratio for sales is $\$2,000.82 / \$2,082.76 = 0.9607$.

h) From your calculations in part a, calculate each year's rate of growth. Using the example in part a, the ratio is 0.9607, so the percentage growth in sales for 2010 is $0.9607 - 1$ or -3.93% .

i) Calculate the average growth rate (using the **AVERAGE** function) of each of the above items using the results you calculated in part b. These averages are arithmetic averages.

Use the **GEOMEAN** function to estimate the compound annual average growth rate (CAGR) for each of the above items using the results that you calculated in part a. Be sure to subtract 1 from the result of the **GEOMEAN** function to arrive at a percent change. These averages are geometric averages.

j) Compare the results from part c (arithmetic averages using the **AVERAGE** function) to those for part d (geometric averages using the **GEOMEAN** function) for each item. Is it true

that the arithmetic average growth rate is always greater than or equal to the geometric average (CAGR)?

k) Contrast the results for the geometric averages to those for the arithmetic average for the variables listed below. What do you observe about the differences in the two growth estimates for Sale and Accounts Payable? What do you observe about the differences in the two estimates for Total Assets and Retained Earnings? Hint: Look at the results from part b (the individual yearly growth rates) for each variable to draw some conclusions about the variation between the arithmetic and geometric averages.

1. Sales
 2. EBIT
 3. Total Assets
 4. Accounts Payable
 5. Retained Earnings
6. Cash budget using What If Analysis
 7. Using Goal Seek to calculate Break Even Points
 8. Demonstrate the statistical functions of Qualcomm Company by using Ms Excel.
 9. Sensitivity analysis of Capital Budgeting–Scenario Analysis, NPV Profile Charts
 10. Use Goal Seek to find out what grade is need on the final assignment to pass the class given that the grades on the first four assignments are **64, 55, 78, and 59**. Use formula or function that calculates the final grade.
 11. Analyzing Data sets with Tables and Pivot Tables
 12. Create an Excel Worksheet for the monthly sales of a product and also represent the data by using bar chart.
 13. Use Goal Seek in Excel find the grade of the fourth exam that produces a final grade of 70.

Exam	Marks
Exam 1	50
Exam 2	80
Exam 3	60

14. Prepare a pay-bill using a worksheet. The work sheet should contain
Employee Id, Name, Designation, Experience and Basic Salary and Job ID.
If Job Id is 1 then DA is 45% of the basic salary. HRA is Rs. 5500.
If Job Id is 2 then DA is 40% of the basic salary. HRA is Rs. 4500.
For all the other Job ids DA is 35% of the basic salary and HRA is Rs. 3500.
For all the above Job ids PF to be deducted is 4%.
For the job ids 1&2 Rs. 100 to be deducted as Professional Tax.
15. Design a chart projecting the cash estimate of a concern.
16. Calculate the slope of a linear trend line equation using GROWTH.

Pedagogy

- Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

Course Designers

1. Dr. S. Krishnaveni
2. Mrs. R. Hemapriya

COURSE CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA23C03	R PROGRAMMING	CORE	73	2	-	4

Preamble

- To introduce R Programming concepts and to develop programming skills in R-Programming.
- To be easily extensible through functions and extensions, and its community is noted for its active package contribution.
- R is highly extensible through the use of packages for specific functions and specific areas of study.

Prerequisite

- No prerequisite required.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	Relate R Programming concepts with Datasets and workflow through the conceptual factors.	K1
CLO2	Demonstrate data frames to perform data manipulations and stimulate the basic approaches.	K2
CLO3	Experiment with various analysis techniques and interpret the features of deployment.	K3
CLO4	Interpret and describe the flow to perform Visualization through several graphical features	K3

Mapping with Programme Outcomes

CLOs	PLO2	PLO2	PL03	PL04	PL05
CLO1	S	S	M	S	S
CLO2	S	M	S	S	M
CLO3	M	S	S	M	M
CLO4	S	M	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I (15 Hrs)

An overview of R: Introduction to R expressions, variables, and functions- -Operator Data Type- Vectors: Grouping values into vectors, then doing arithmetic and graphs with them- Matrices: Creating and graphing two-dimensional data sets- Calculating and plotting some basic statistics: mean, median, and standard deviation- Factors: Creating and plotting categorized data.

UNIT II (15 Hrs)

Data Frames: Organizing values into data frames, loading frames from files and merging them- Working with Real-World Data: Testing for correlation between data sets, linear

models and installing additional packages.

UNIT III (14 Hrs)

Data Manipulations: Overview of how to connect databases from R-How to run SQL queries from R to fetch data- Data manipulation using SQL to prepare data for analysis.

UNIT IV (15 Hrs)

Reading and writing of csv file- Importing and exporting of data set-Merging of file having same or different number of column-Reading a file involving date and converting this date into different format-Plotting two series on one graph-one with a left y axis and another with a right y axis- histogram-Multivariate Statistical Techniques like Discriminant Analysis, Factor Analysis.

UNIT V (14 Hrs)

Formula notation and complex statistics: Analysis of Variance (ANOVA) - Manipulating Data and Extracting Components: Creating data for complex analysis – summarizing data Regression – Simple Linear Regression – Multiple Regression – Curvilinear Regression.

Text Book

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Dr.Mark Gardener	Beginning R: The Statistical Programming Language(Wrox)	John Wiley & Sons, Inc.,	2016 revised edition

Reference Books

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Norman Matloff	The Art Programming	No Starch Press	2011 edition
2.	Michael.J.Crawle	The R Book	Wiley	2008 edition
3.	M.John	Statistical Analysis with R.	Tata McGraw Hill Publishing Co. Ltd	October Edition 2010
4.	R Richard Cotton	Learning R	O'Reilly Media	September Edition 2013

Online References

1. The Book of R - A First Course in Programming and Statistics - Tillman M. Davies - Publisher: William Pollock-2016
2. R for Beginners - Emmanuel

Skill Components

- Acquire knowledge to relate R Programming concepts with Datasets
- Establish data frames to perform data manipulations
- Analyze data using Descriptive Statistics and measures
- Experiment with various quantitative analysis techniques
- Analysis with Correlation and Regression

Course Designers

1. Dr. S. Krishnaveni.

2. Mrs. N. Sathya.

CM23C04	FINANCIAL ACCOUNTING	Category	L	T	P	Credit
		Theory	73	2	-	3

Preamble

- To enable the students to apply the conceptual principles in financial Accounting
- To develop an expertise in handling the accounts and thereby to increase their level of understanding about the financial statements relating to partnership firms, insurance claims & insolvency.
- To enhance knowledge in partnership, insurance and insolvency accounting

Prerequisite

- Basic Knowledge in accountancy

Course Learning Outcomes

- On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	Define the concepts of Partnership Firms, Fire Insurance Claims and Insolvency Accounts	K1
CLO2	Describe the accounting treatment of Partnership Firms, Fire Insurance Claims and Insolvency Accounts	K2
CLO3	Apply the procedures related to partnership firms, calculation of insurance claims and Insolvency Accounts	K3
CLO4	Analyze and prepare financial accounts for partnership firms in different situations, Insurance claims and Insolvency Accounts	K4

Mapping with Programme Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	M	M	S
CLO2	S	S	M	M	S
CLO3	S	S	S	S	M
CLO4	S	S	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

Unit I (15Hrs)

Partnership Accounts: Division of Profits – Fixed & Fluctuating Capital – Past Adjustments – Guarantee of Profits – Admission of a partner - **Limited Liability Partnership:** Introduction- Definition – LLP Act 2008 - Features – Advantages and Disadvantages (Theory Only)

Unit II (14Hrs)

Retirement of a Partner: Retirement Cum Admission -Death of a partner- Joint Life Policy – Accounting Treatment

Unit III (15Hrs)

Dissolution of a Firm: Insolvency– Rule in Garner Vs Murray – Piece –Meal Distribution.(Maximum Loss Method only).Sale of Partnership to a Limited Company.

Unit IV (15Hrs)

Fire Insurance Claims: Computation of Claim for Loss of Stock and loss of profit (excluding normal & abnormal loss)

Unit V (14Hrs)

Insolvency Accounts: Relevant Act- Statement of Affairs – Deficiency Accounts - The Insolvency & Bankruptcy code 2016

Text Book

S. No	Authors	Title	Publishers	Year of Publication
1.	Reddy T S & A Murthy	Financial Accounting	Margham Publications	Reprint 2023

Reference Books

S. No	Authors	Title	Publishers	Year of Publication
1.	RL Gupta & Radhasamy	Advanced Accountancy (Vol I)	Sultan Chand & Sons.	2018, 13 th ed.
2.	Jain S.P & Narang K.L	Principles of Accountancy	Kalyani Publishers	2018
3.	MC Shukla, T.S. Grewal & S.C. Gupta	Advanced Accountancy	S. Chand & sons	2019

Skill Components

- Working on practical aspects of admission and retirement with partners' capital
- Preparation of partnership deed with important terms and conditions
- Preparation of deficiency statement for a real time partnership firm
- Calculation of Insurance claims for real time losses
- Case study analysis on Insolvency and Bankruptcy code

Course Designers

1. Dr. S. Sujatha, Department of Commerce
2. Dr. L. Nithya, Department of Commerce

23PECM1	PROFESSIONAL ENGLISH FOR COMMERCE AND MANAGEMENT	Category	L	T	P	Credit
		AEC	2 5	5	-	2

Objectives

1. To develop the language skills of students by offering adequate practice in Professional contexts.
2. To enhance the lexical, grammatical and socio-linguistic and communicative Competence of first year commerce and management students
3. To focus on developing students' knowledge of domain specific registers and the required language skills.
4. To develop strategic competence that will help in efficient communication
5. To sharpen students' critical thinking skills and make students culturally aware of the target situation.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	Recognize their own ability to improve their own competence in using the Language	K1

CLO2	Use language for speaking with confidence in an intelligible and acceptable manner	K2
CLO3	Read independently unfamiliar texts with comprehension and understand the importance of reading for life	K3
CLO4	Understand the importance of writing in academic life	K3
CLO5	Write simple sentences without committing error of spelling or grammar	K3

Mapping with Programme Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	L	M	S	S	S
CLO2	L	L	S	M	M
CLO3	M	L	M	L	M
CLO4	L	M	M	L	M
CLO5	L	M	M	M	M

S-Strong; M-Medium, L- Low

Syllabus

UNIT 1: COMMUNICATION (5 hours)

Listening: Listening to audio text and answering question

Listening to Instructions

Speaking: Pair work and small group work.

Reading: Comprehension passages –Differentiate between facts and opinion

Writing: Developing a story with pictures.

Vocabulary: Register specific – Incorporated into the LSRW tasks

UNIT 2: DESCRIPTION (5 hours)

Listening: Listening to process description.-Drawing a flow chart.

Speaking: Role play (formal context)

Reading: Skimming/Scanning- Reading passages on products, equipment and gadgets.

Writing: Process Description –Compare and Contrast Paragraph-Sentence Definition and Extended definition- Free Writing.

Vocabulary: Register specific -Incorporated into the LSRW tasks.

UNIT 3: NEGOTIATION STRATEGIES (5 hours)

Listening: Listening to interviews of specialists / Inventors in fields (Subject specific)

Speaking: Brainstorming. (Mind mapping).
Small group discussions (Subject- Specific)

Reading: Longer Reading text.

Writing: Essay writing (250 words)

Vocabulary: Register specific – Incorporated into the LSRW tasks

UNIT 4: PRESENTATION SKILLS (5 hours)

Listening: Listening to lectures.

Speaking: Short talks.

Reading: Reading Comprehension passages
Writing: Writing Recommendations
 Interpreting Visuals inputs
Vocabulary: Register specific – Incorporated into the LSRW tasks

UNIT 5: CRITICAL THINKING SKILLS (5 hours)

Listening: Listening comprehension- Listening for information.
Speaking: Making presentations (with PPT- practice).
Reading: Comprehension passages –Note making.
Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills
Writing: Problem and Solution essay– Creative writing –Summary writing
Vocabulary: Register specific – Incorporated into the LSRW tasks

Text Book

S.No.	Authors	Title of the Book	Publishers	Year of Publication
1	Tamil Nadu State Council for Higher Education (TANSICHE)	English for Commerce and Management Semester 1	--	--

Reference Books

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1	Sreedhran, Josh	The Four Skills for Communication	Foundation books	2016
2	Pillai, G Radhakrishna, K Rajeevan, P Bhaskaran Nair	Spoken English for you	Emerald	1998
3	Pillai, G Radhakrishna, K Rajeevan, P Bhaskaran Nair	Written English for you	Emerald	1998

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
BP23C05	DIGITAL MARKETING	THEORY	73	2	-	4

Preamble

- To provide students with an comprehensive understanding of methodologies underlying digital marketing
- To provide insight into digital marketing channels
- To familiarize with ethical considerations and technological advancements in digital marketing

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO Number	CLO Statement	Knowledge Level
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CLO1	Identify the key concepts of digital marketing and its terminology	K1
CLO2	Interpret the principles of digital marketing strategies	K2
CLO3	Apply diverse digital marketing techniques in real-world scenarios	K3
CLO4	Examine with practical skills and knowledge to plan, execute, and optimize effective digital marketing campaigns	K4

Mapping with Programme Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	M	S	S	M
CLO2	S	S	S	L	S
CLO3	S	M	S	L	M
CLO4	S	S	S	M	S

S- Strong; M-Medium; L - Low

Syllabus

UNIT I

(14 Hrs)

Digital Marketing - Origin & Development - Role - Strategy- P-O-E-M Framework - Factors Impacting Digital Market Place- Value Chain Digitalization- Digital Marketing Business Models -

Digital Marketing Plan - Ethical and Legal Framework of Digital Marketing- Skills required in Digital Marketing - ***Careers in Digital Marketing***

UNIT II

(15Hrs)

Digital Ecosystem-The Rise of Digital marketing-Digital paradigm and marketing-Online consumer behaviour-Branding-Digital Brand Ecosystem-Brand Experience-**Search Engine Optimization**- SEO Phases - ***Website Design and Hosting*** - Blogs -Search Engine Advertising - Display Advertising - Types of Display Ads - Targeting in Digital Marketing- ***Consumer persona***- Programmatic Digital Advertising

UNIT III

(15 Hrs)

E-Mail Marketing - Creating an E-Mail Campaign in Mail Chimp - Building Effective E-Mail Lists - ***Campaign Design and Mail Delivery*** – **Mobile Marketing** – Mobile Advertising - Mobile Advertising Models- ***Advantages of Mobile Advertising*** - Mobile Marketing Toolkit - Mobile Apps - Screen Analytics

UNIT IV

(15 Hrs)

Social Media Marketing - Strategy- Listening- ***Social Messaging Apps***- Social Entertainment- Gamification - ***AI for Social Media Marketing***- Influencer Marketing- Video Marketing - Online Reputation Management- **Digital Marketing Services** - Online Retail Services - Online Travel Services- Online Career Services - ***Online Publishing***

UNIT V

(14Hrs)

Technological Advancements in Digital Marketing -Voice Search- Beacon Technology- Micro Moment Marketing-Cross Device Marketing- ***Artificial Intelligence***- Chatbots - Big Data-Virtual Reality- ***Augmented Reality***- Block Chain Technology

***Highlighted Content offered in Blended Mode**

Link

Unit I

- <https://www.webfx.com/blog/marketing/6-steps-on-how-to-create-a-digital-marketing-plan/>
- <https://online.hbs.edu/blog/post/digital-marketing-plan>
- <https://www.upgrad.com/blog/career-in-digital-marketing/>
- <https://iide.co/blog/career-in-digital-marketing-in-india/>
- <https://youtu.be/fo9bz8sg0QA>

Unit II

- <https://www.invisionapp.com/defined/web-design-and-development>
- <https://www.business.qld.gov.au/running-business/marketing/sales/marketing/websites-social-media/building-managing-website>
- <https://www.delve.ai/blog/customer-personas>
- <https://opentextbc.ca/foundationdigitalmarketing/chapter/customer-personas/>
- <https://youtu.be/9aPAPANeMKg>

Unit III

- <https://sendpulse.com/support/glossary/email-campaign>
- <https://optinmonster.com/how-to-run-a-successful-email-marketing-campaign/>
- <https://www.youtube.com/watch?v=ucd4wz3xJNo>
- <https://onaudience.com/mobile-advertising-key-points-and-benefits>
- <https://www.airtory.com/blog/what-is-mobile-advertising-examples-types-benefits>

Unit IV

- <https://www.k6agency.com/social-messaging-app/>
- <https://sproutsocial.com/insights/social-messaging-apps/>
- <https://www.analyticsvidhya.com/blog/2023/04/ai-in-social-media/>
- <https://usmsystems.com/the-future-of-artificial-intelligence-in-social-media-marketing/>
- <https://www.copypress.com/kb/content-marketing/everything-you-need-to-know-about-digital-publishing/>
- <https://www.stateofdigitalpublishing.com/digital-publishing/what-is-digital-publishing/>

- <https://indiamedia.club/insights/what-is-online-publishing-complete-guide/>
- <https://youtu.be/R70OP-bQuAU>

Unit V

- <https://blog.hubspot.com/marketing/aimarketing#:~:text=Predicting%20Customer%20Behavior,%2C%20email%20opens%2C%20and%20more.>
- <https://www.nihtdigitalmarketing.com/blog/artificial-intelligence-in-digital-marketing>
- <https://iimskills.com/artificial-intelligence-in-digital-marketing/>
- https://youtu.be/Z0_PG0l_-jE
- <https://mailchimp.com/resources/augmented-reality-in-marketing/>
- <https://www.deskera.com/blog/augmented-reality-marketing/>
- <https://bootcamp.cvn.columbia.edu/blog/augmented-reality-examples/>
- <https://youtu.be/rgKBUOh15Fs>

Text Book

S.No	Authors	Title	Publishers	Year and edition
1.	Seema Gupta	Digital Marketing	McGrawHill Education	3 rd Edition 2023

Books for Reference

S.No	Authors	Title	Publishers	Year and edition
1.	Puneet Singh Bhatia	Fundamentals of Digital Marketing	Pearson Education	2 nd Edition 2019
2	Vandana Ahuja	Digital Marketing	Oxford University	2 nd Edition 2018

Skill Component

- Develop multimedia content, such as blog posts, videos, and data visualizations to target specific
- Audit of a Brand's Social Media Presence
- Conduct market research to identify target segments, analyze competitors, and uncover market trends relevant to a chosen industry or product.

Pedagogy

Powerpoint presentations, Group Discussion, Seminar, Quiz, Assignment, Brainstorming, Case Study

Course Designers

1. Dr.R.Jayasathya
2. Ms.R.Sangeetha

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA23C06	DATABASE PROGRAMMING	THEORY	58	2	-	3

Preamble

- To provide comprehensive knowledge about relational and NoSQL database management system

Prerequisite

- No prerequisite required

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	Interpret relational database management concepts	K1
CLO2	Develop the tables using normalization	K2
CLO3	Illustrate SQL operators and keys	K3
CLO4	Understand the concepts of NOSQL, MONGODB and WEKA	K4

Mapping with Programme Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	S	S	M
CLO2	S	S	S	S	S
CLO3	M	S	S	S	M
CLO4	M	M	S	S	M

S- Strong; M-Medium

Syllabus

Unit I

(12 Hrs)

Introduction to Database Management System - Data Models - Database system architecture - The SQL Language - Relational Database Management System - ***Candidate key, primary tables key, Foreign Key - Relational Operators - Attribute domains and their Implementations - New conventions for Database Object*** - Structure of SQL statements and SQL writing Guidelines

Unit II

(12 Hrs)

Functional Dependencies - Normalization process: 1NF, 2NF, 3NF, BCNF - Creating foreign keys and primary keys - ***The E-R Model - Entities and Attributes-Relationships*** - Normalizing the Model- Creating Tables - Describing the structure of a Table - Populating tables - Table Instance Charts - Implementation of the selection Operator - ***Using aliases to control column Headings - Implementation of the projection and join Operators***

Unit III

(12 Hrs)

Built in Functions – Numeric - Character Conversion Functions - Introduction to group functions - sum, avg, max, min, count - combining single value and group functions - ***Displaying Specific Groups-Introduction to processing date and Time*** - Arithmetic with Dates - Date Functions - Formatting dates and time – Subqueries - Correlated Queries - ***Using subqueries to create, update, insert and delete rows from a Table – Transaction - Commit, rollback, save point and auto Commit**

Unit IV

(12 Hrs)

Overview and History of NoSQL Databases - Definition of the Four Types of NoSQL Database-The Value of Relational Databases - Getting at Persistent Data – Concurrency – Impedance Mismatch-Application and Integration Databases - Attack of the Clusters - The Emergence of

NoSQL - *Aggregates - Key-Value and Document Data Models - Column-Family Stores - Summarizing Aggregate-Oriented Databases - More Details on Data Models - Distribution Models
 – Consistency*Introduction to MongoDB - Getting Started – Querying - Creating, Updating, and Deleting Documents*Designing Your Application: Indexing - Special Index and Collection Types*
 Unit V (10 Hrs)

Introduction to WEKA – Installation - The Explorer – *Getting started* – Loading data – File formats-Processing data – *Filtering algorithm* The over view of Grafdatabase

Link

Unit I

- <https://www.youtube.com/watch?v=z2hGJc-aDY0>
- <https://www.youtube.com/watch?v=t6whMUGrF5I>
- <https://www.youtube.com/watch?v=3Ab3F0rfLN8>

Unit II

- <https://www.youtube.com/watch?v= riISaqXpOs>
- <https://www.youtube.com/watch?v= riISaqXpOs>
- <https://www.youtube.com/watch?v=1ecXPI9V2Gk>

Unit III

- https://www.youtube.com/watch?v=dKFir4X3_CU
- <https://www.youtube.com/watch?v=vpl2LJhqU6w>
- <https://www.youtube.com/watch?v=V0zwm9VYdc>

Unit IV

- <https://www.youtube.com/watch?v=gUax9fWif7I>
- <https://www.youtube.com/watch?v=uB.IWHO56gx8>
- <https://www.youtube.com/watch?v=0buKOHokLK8>

Unit V

- <https://www.youtube.com/watch?v=BxhPtYguXus>
- <https://www.youtube.com/watch?v=dsd5yg3W4GY>

Text Books				
S.No.	Author Name	Book Name	Publisher	Year and Edition
1	Ramon A Mata- Toledo Pauline K Cushman	Database Management System	Tata McGraw-Hill Publishing company limited, New Delhi.	2010, 2nd edition
2.	Pramod J. Sadalage & Martin Fowler	NoSQL Distilled	Pearson Education, Inc. O'Reilly Media, Inc.,	2013
3	Kristina Chodorow	MongoDB: The definitive guide	Pearson Education, Inc. O'Reilly Media, Inc.,	2013, 2nd Edition
4	Eibe Frank, Mark A. Hall, and Ian H. Witten	The WEKA workbench	Morgan Kaufmann	2016, 4th Edition

Reference Books				
S.No.	Author Name	Book Name	Publisher	Year and edition
1	Ramakrishnan & Gehrke	Database Management Systems	Tata McGraw Hill	2009, 8th edition
2	Nilesh Shah	Database Systems using Oracle	PHI learning pvt Ltd	2014, 2nd edition
3	Alexis Leon & Mathews Leon	Fundamentals of database management systems	Tata McGraw Hill	2011, 3rd edition

Skill Components

- Understand the concepts of tables, queries and SQL.
- Demonstrate SQL queries, operators, aggregate function, subquery and join operators.
- Identify the concepts of normalization.
- Interpret SQL and NOSQL - MONGODB.
- Identify and evaluate the data and infer the results with WEKA.

gogy

Peda

- Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

Course Designers

1. Mrs.N.Sathya
2. Ms.M.Pooja

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
BP23A01	BUSINESS MANAGEMENT AND ETHICS	THEORY	73	2	-	4

Preamble

- To provide the students with an understanding of the basic principles of management in the functional areas of business to pursue careers in management with ethics

Prerequisite

- Basic Knowledge on Business Management

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLOs	CLO Statement	Knowledge Level
CLO1	Recognize the fundamental concepts and principles of management, Planning, Organisation, leadership and control including the function and its nature.	K1
CLO2	Identify the management process and decision making in management	K2

	functions	
CLO3	Apply the theories and identify various case studies for practical applications of management concepts	K3
CLO4	Demonstrate the process of management functions and evaluate the social responsibility and ethical issues in business situations	K4

Mapping with Programme Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	S	S	S
CLO2	S	S	S	M	S
CLO3	S	S	M	S	S
CLO4	S	S	M	M	M

S- Strong; M-Medium

Syllabus

UNIT I

(14 Hrs)

Management –Definition - Nature and Scope – ***Functions– Managerial Skills– Levels of Management*** – Roles and Skills of a Manager- Contributions by Henry Fayol, FW Taylor, Peter F Drucker, McGregor, Elton Mayo-***Management as a Science, Art, Profession- Management and Administration***– Principles of Management

UNIT II

(14 Hrs)

Planning: Meaning – Nature- ***Importance- Purpose of Planning***- Planning Process - Advantages and Limitations- Types of Plans – ***Objectives – Policies – Strategies – Procedures – Programmes – Obstacles to Effective Planning*** - Decision Making: Steps in Decision Making – Role of MIS for Decision Making. ***MBO – MBE - Policy and Strategy***.

UNIT III

(15 Hrs)

Organization –Meaning - Nature and Importance – ***Process of organization– Organization structure– Organization chart–Organization manuals***–Types of Organization - Departmentation - Span of Management - ***Authority – Responsibility - Accountability*** - Power – Delegation – Centralization - Decentralization-Staffing-Case study

UNIT IV

(15 Hrs)

Leadership –Meaning and Importance –***Functions of Leadership–Leadership styles– Qualities of good leader*** –Theories & Approaches of Leadership-Directing-Functions-***Coordination – Meaning – Definition – Principles-Advantages&Disadvantages***-Case study

UNIT V

(15 Hrs)

Control –Meaning - and Importance –***Process & Techniques of control***-Ethics-Meaning– Importance Nature &***Relevance-Structure of ethics management-Ethics in business***-Factors affecting ethical practice in business-Social Responsibility of Business.

* Highlighted Content offered in Blended Mode (Link Provided)

Link

Unit I

- <https://study.com/academy/lesson/management-in-organizations-top-middle-low-level-managers.html>

- <https://www.youtube.com/watch?v=aWV8w-coyhM>
- <https://slideplayer.com/slide/1516906/>

Unit II

- <https://blog.mindmanager.com/blog/2020/02/27/202002the-6-steps-of-the-strategic-planning-process/>
- <https://study.com/academy/lesson/what-is-management-by-objectives-mbo-definition-advantages-disadvantages.html>

Unit III

- <https://www.slideshare.net/WelingkarDLP/12-organization-charts-and-manuals>
- <https://blog.mindmanager.com/blog/2020/02/27/202002the-6-steps-of-the-strategic-planning-process/>

Unit IV

- <https://smallbusiness.chron.com/four-functions-management-leadership-styles-64958.html>

Unit V

- <https://blog.mindmanager.com/blog/2020/11/03/complete-visual-project-planning-toolkit/>

Text Books

S. No	Authors	Title	Publishers	Year and Edition
1.	R K Sharma & Shasi K Gupta	Principles of Management	Kalyani Publishers	2017 reprint
2.	Dinkar Pagre	Principles of Management	Sultan Chand & sons	2018 reprint

Reference Books

S. No	Authors	Title	Publishers	Year and Edition
1.	Dr. C. N. Sontakkai	Principles of Management	Kalyani Publishers,	2016 reprint
2.	PC tripathi & PN Reddy	Principles of Management	Tata Mcgraw Hill Publishing Co Ltd	2017 ed.
3.	bbins, De Cenzo, & Coulter.	Fundamentals of Management	Pearson Education Ltd	2017 th ed

Skill Components

- Preparation of different types of organisation charts
- Construct a standing plan for a new business venture
- Demonstrate different leadership styles through role play
- Study the ethical practices followed in the organization
- Select any one company and prepare SWOT analysis

- Prepare a report of CSR activities followed in an organisation

Pedagogy

- Lecture, PPT presentation , Quiz, Group Discussion, Seminar, Assignment, Activity based learning

Course Designers:

1. Dr.A.Meenakshi- Department of B Com(CA)
2. Dr.NithyaRamadass- Department of B Com(CA)

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
AF23A02	BUSINESS ECONOMICS	THEORY	73	2	-	4

Preamble

- To introduce microeconomic and macroeconomic concepts
- To familiarize various economic theories
- To interpret and examine the monetary and fiscal police

Prerequisite

- Basic knowledge in economics

Course Learning Outcomes

On the successful completion of the course, Students will demonstrate their knowledge of the fundamental and technical concepts of economics and also students will be able to make decisions wisely using cost- benefit analysis.

CLO Number	CLO Statement	Knowledge Level
CLO1	Define and understand the various laws of economics	K1
CLO2	Interpret Economic theories and policies	K2
CLO3	Examine the different market structure and pricing policy	K4
CLO4	Identify the various methods of Forecasting, Demand and Supply Functions, National Income & budgeting.	K3

Mapping with Programme Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	S	S	M
CLO2	S	S	S	S	M
CLO3	S	S	S	S	M
CLO4	S	S	S	S	M

Syllabus

Unit I

(14 Hrs)

Introduction to Economics – Wealth, Welfare and Scarcity Views on Economics - Positive and Normative Economics. Definition – ***Scope and Importance of Business Economics***. Concepts: Production Possibility frontiers – Opportunity Cost – ***Accounting Profit and Economic Profit*** – ***Incremental and Marginal Concepts*** – Concept of Efficiency

Unit II

(15 Hrs)

Demand and Supply Functions: Meaning of Demand – Determinants and Distinctions of demand – Law of Demand – ***Elasticity of Demand – Demand Forecasting*** – Supply concept and Equilibrium. ***Consumer Behaviour: Law of Diminishing Marginal utility – Equi-marginal Utility*** – Indifference Curve – Definition, Properties and equilibrium

Unit III

(15 Hrs)

Production: Law of Variable Proportion – Laws of Returns to Scale – Producer's equilibrium – Economies of Scale. Cost Classification – ***Break Even Analysis. Product Pricing***: Price and Output Determination under Perfect Competition, Monopoly – Discriminating monopoly – Monopolistic Competition - Oligopoly-Pricing objectives and Methods

Unit IV

(15 Hrs)

National Income - Gross National Product -Net National Product - Measurement of National Income - Consumptions, savings and investments. Theory of Employment- Type of unemployment- Labour and Population theories- Definition of capital and growth of capital- Steps in capital formation. Money - Definition and functions of money- ***Quantity theory of money***. Public Finance- Principle of taxation- ***Direct and indirect taxes***

Unit V

(14 Hrs)

Monetary and Fiscal Policies– measures of money stock – policy and money supply – ***instruments of monetary policy*** – fiscal policy – the union budget – state budgets – Inflation - Deflation – Meaning – Causes & Effects – ***Measures to control inflation and deflation*** – ***importance of the budget***.

*** Highlighted Content offered in Blended Mode (Link Provided)**

Link

Unit I

- <https://youtu.be/9kai9P-KeNo>
- <https://core.ac.uk/download/pdf/230052956.pdf>
- <https://youtu.be/hWsZOY5W1T8>

Unit II

- https://youtu.be/YCF_EieOibE
- https://youtu.be/KgmNg2d8X_Dk
- <https://www.econstor.eu/bitstream/10419/222942/1/Margin%20utility.pdf>

Unit III

- https://youtu.be/swjwXTbEV_6E
- <https://youtu.be/XZ0riJeipw4>
- https://youtu.be/SSbxRx4RA_hI
- <https://egyankosh.ac.in/bitstream/123456789/10222/1/Unit-7.pdf>

Unit IV

- https://youtu.be/A374ELBK7_Cc
- https://youtu.be/q59tZKP0H_ME
- <https://egyankosh.ac.in/bitstream/123456789/19313/1/Unit-18.pdf>
- <https://silapatharcollege.edu.in/online/attendance/classnotes/files/1623153719.pdf>
- https://youtu.be/UTxWeizxFc_Y

Unit V

- <https://www.cbn.gov.ng/Out/EduSeries/Series9.pdf>
- <https://www.yourarticlelibrary.com/macro-economics/inflation-macro-economics/controlling-inflation-3-important-measures-to-control-inflation/31093>
- <https://bank.caknowledge.com/deflation-meaning-reasons-measures-control/>
- <https://youtu.be/j1Vwth0B8I8>

TextBook

S.No.	Author Name	Title of the book	Publisher	Year and edition
1	Francis Cherunilam	Business Environment (Unit V)	Himalaya Publishing House, Mumbai – 04	2017, 25 th Edition
2	Shankaran S	Business Economics (Unit IV)	Margham Publications	2014 Edition
3	Sundharam KPM Sundharam E N	Business Economics (Unit I-IV)	Sultan Chand & Sons -New Delhi – 02.	2016 Edition

Reference Books

Sl.No	Author Name	Title of the book	Publisher	Year and edition
1	Chaudhary C.M	Business Economics	RBSA Publishers – Jaipur - 03.	2019 Edition
2	Mehta P.L	Managerial Economics – Analysis, Problems & Cases	Sultan Chand & Sons - New Delhi – 02.	2016 th Edition

Skill Components

- Analyse the Corporate Governance mechanism and principles.
- To enable the students to do a study related to the implementation of Corporate Governance in leading Indian companies.
- Role play on the duties and responsibilities of the person in charge of the implementation of Corporate Governance in companies.
- Discuss the implementation of Corporate Governance code in different countries

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

Course Designers

1. Mrs. S. Manasha
2. Ms. M. Pooja

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA23A03	CORPORATE GOVERNANCE	THEORY	73	2	-	4

Preamble

- To analyze corporate governance mechanism and principles
- To understand the code and guidelines of corporate governance

Prerequisite

- Basic Knowledge of Corporate Governance

Course Learning Outcomes

On the successful completion of the course, students will be

CLOs	CLO Statement	Knowledge Level
CLO1	Find and Summarize mechanism, principles, and issues related to corporate governance.	K1
CLO2	Illustrate the corporate governance code and guidelines	K2
CLO3	Develop and examine the role of corporate governance in national and international companies	K3
CLO4	Analyse mechanisms, principles, issues related to corporate governance	K4

Mapping with Programme Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	S	M	S
CLO2	S	S	S	S	M
CLO3	S	S	S	S	S
CLO4	S	M	S	S	S

S- Strong; M-Medium

UNIT I

(15 Hrs)

Corporate Governance – Introduction – People Orientation of Public Governance- ***Different Systems in Public Governance*** - Structure of Public Governance and Corporate Governance - Comparison between Corporate Governance and Public Governance - ***History of Corporate Governance – Concept of Corporate Governance & Stakeholder***

UNIT II

(15Hrs)

Corporate Governance Mechanism and Overview – 4 P's of Corporate Governance - Wealth Creation, Management and Distribution – ***Disclosure in Offer Documents - Clause 49*** Principles of Corporate Governance – Introduction – OECD Principles of Corporate Governance – ***Annotations to the OECD Principles of Corporate Governance*** – Issues Related to Corporate Governance- Introduction –

Needfor Good Corporate Governance - Role and Responsibilities of Investors - Competency and Training

UNIT III

(15Hrs)

Decision System - Role of the Directors and Management – The Board Performs its Oversight Function- Relationships with Stockholders and other Constituencies - Corporate capital and its property rights - Mechanism and control – ***Systemic Problem of Corporate Governance*** - Introduction and History ***Code of Business Conduct*** - Code of Business Ethics. – ***Corporate Social Responsibility*** - Introduction – implementation Generate Business Benefits

UNIT IV

(14 Hrs)

Codes and Guidelines - Guidelines for Person incharge – Duties and Responsibilities of Person in charge-***General Code of Corporate Governance*** - Guidelines- Rules and Regulations ***Enforcement of Regulations - e-Governance***

UNIT V

(14Hrs)

International Corporate Governance – ***Germany – France*** - United Kingdom- USA Corporate Governance in leading Indian Companies

*** Highlighted Content offered in Blended Mode (Link Provided)**

Link

Unit I

- <https://www.youtube.com/watch?v=MnjDyeF3g30>
- <https://www.youtube.com/watch?v=b8FQLgZtQCU>
- <https://www.ijert.org/papers/IJCRT1133063.pdf>
- <https://www.youtube.com/watch?v=atkZIIHaK08> <https://www.youtube.com/watch?v=atkZIIHaK08>

Unit II

- <https://www.youtube.com/watch?v=ika6RRsj-Xs>
- https://youtu.be/KgmNg2d8X_Dk
- https://www.youtube.com/watch?v=kAF9_JDJ3
- https://youtu.be/KgmNg2d8X_Dk
- https://www.youtube.com/watch?v=E59xqO_A4toM <http://media3.novi.economicsandlaw.org/2017/07>
- </Vol05/Vukcevic-05-IJEAL.pdf>

Unit III

- <https://www.youtube.com/watch?v=OpxQaB761k>
- <https://www.youtube.com/watch?v=D3stNj28yos>
- <https://www.youtube.com/watch?v=Me5GH9Iqvss>
- <https://www.ijert.org/papers/IJCRT2012052.pdf>
- <https://www.ijert.org/papers/IJCRT1801578.pdf>

Unit IV

- <https://www.youtube.com/watch?v=D3stNj28yos>
- <https://www.youtube.com/watch?v=o5WvVjhw0sk>
- <http://www.ignou.ac.in/upload/B2U2cit-002.pdf>

Unit V

- <https://www.youtube.com/watch?v=oJpG0MKwgM8> <https://core.ac.uk/reader/14504680>

Text Book

S.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Swami Parthasarathy	Corporate Governance	Biztantra , New Delhi	5 th Edition, Reprint 2008

Reference Books

S.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Kesho, Prasad	Corporate Governance	New Delhi:Prentice Hall	4 th Edition, 2006
2.	Singh. S	Corporate Governance	New Delhi: Excel Books	3 rd Edition, 2005

Skill Components

- Analyse the Corporate Governance mechanism and principles.
- To enable the students to do a study related to the implementation of Corporate Governance in leading Indian companies.
- Role play on the duties and responsibilities of the person incharge of the implementation of Corporate Governance in companies.
- Discuss the implementation of Corporate Governance code in different countries

Course Designers

1. Mrs.S.Manasha
2. Mrs.Divya

COURSE NUMBER	COURSENAME	CATEGORY	L	T	P	CREDIT
DA23CP3	DATABASE PROGRAMMING PRACTICAL	PRACTICAL	-	-	45	1

Preamble

- To enhance practical knowledge in Database Management using SQL, MongoDB

Course Learning Outcomes

On the successful completion of the course, students will be able to analyse the data using query

CLOs	CLO Statements	Knowledge Level
CLO1	Show the features of database	K1
CLO2	Demonstrate data definition and data manipulation languages	K2
CLO3	Identify data store and query languages	K3
CLO4	Apply the databases in analytical tools	K4

Mapping with Programme Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	S	S	L
CLO2	S	S	M	S	L
CLO3	S	S	S	S	S
CLO4	S	M	M	M	S

S-Strong; M-Medium; L-Low

Syllabus

1. Normalize the following dataset: Employee database

2. Data Definition Language and Data Manipulation

LanguageTable: Student

Regno	number(5)	primary key
Studname	varchar2(15)	
Gender	char (6)	
Deptname	char(15)	
Address	char(25)	
Percentage	number(4,2)	

Queries:

- To create a table, describe a table, alter a table, drop a table, and truncate a table
- To insert values, retrieve records, update records, delete records

3. Create an Employee table with following field.

Eno	number(5)	primary key
Ename	varchar2 (20)	not null
Deptno	number (2)	not null
Desig	char(10)	not null
Sal	number(9, 2)	not null
Comm.	number (7, 2)	null

Queries:

- Insert values and display the records
- Display sum, maximum amount of basic pay
- List the name of the clerks working in the department 20
- Display name that begins with „G“
- List the names having „I“ as the second character
- List the names of employees whose designation are „Analyst“ and „Salesman“
- List the different designation available in the Employee table without duplication (distinct)

4. Create a student table with the following fields

Stuno	number(5)	primary key
Stunm	varchar2(20)	
Age	number(2)	
Mark1	number(3)	
Mark2	number(3)	
Mark3	number(3)	

Queries:

- a. Insert values and display the records
- b. List the names and age of the student whose age is more than 12
- c. Display total and average of marks
- d. Display the names of the maximum total & minimum total student
- e. List the names of the student that ends with „A“
- f. List the names of student whose names have exactly 5 characters

5. Create the table PAYROLL with the following fields and insert the

Emplno	number(8)
Emplname	varchar2(8)
Dept	varchar2 (10)
Baspay	number(8, 2)
HRA	number(6, 2)
DA	number(6, 2)
Pf	number(6, 2)
Netpay	number (8, 2)

Queries:

- a. Update the records to calculate the net pay.
- b. Arrange the records of the employees in ascending order of the net pay.
- c. Display the details of the employees whose department is "Sales".
- d. Select the details of employees whose HRA \geq 1000 and DA \leq 900.
- e. Select the records in descending order.

6. Create a Table Publisher and Book with the following fields: Table:

publisher

Pubcode	varchar2(5)
Pubname	varchar2(10)
Pubcity	varchar2(12)
PubState	varchar2(10)
Bookcode	varchar2(5)
Booktitle	varchar2(15)
Bookcode	varchar2(5)
Bookprice	varchar2(5)

Queries:

- a. Insert the records into the table publisher and book.
- b. Describe the structure of the tables.
- c. Show the details of the book with the title "DBMS".
- d. Show the details of the book with price $>$ 300.
- e. Show the details of the book with publisher name "Kalyani".
- f. Select the book code, book title; publisher city is "Delhi".
- g. Select the book code, book title and sort by book price.
- h. Count the number of books of publisher starts with "Sultanchand".
- i. Find the name of the publisher starting with "S".

MONGODB:

7. Create a Student Database in MongoDB using "use" Command.
8. Create program using CRUD operation using MongoDB.
9. Create program text search and indexes using MongoDB.

WEKA:

10. Demonstration of preprocessing on dataset student.arff
11. Demonstration of classification rule process on dataset employee.arff using J48 algorithm
12. Demonstration of clustering rule process on dataset iris.arff using simple K-means

Pedagogy

- Demonstration through System, Demonstration through PPT

Course Designers

1. Mrs.N.Sathya
2. MS.M.Pooja

COURSE CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA23SCE1	SKILL BASED SUBJECT I – DATA SCIENCE AND STATISTICS	SEC	44	1	-	3

COURSERA BUNDLE (44 HRS)

1. Data and Statistics Foundation for Investment Professionals (13 Hrs)

<https://www.coursera.org/learn/data-statistics-foundation-investment>

2. Statistics for Machine Learning for Investment Professionals (13 Hrs)

<https://www.coursera.org/learn/statistics-machine-learning-investment>

3. The Data Scientist's Toolbox (18 Hrs)

<https://www.coursera.org/learn/data-scientists-tools>

Course Number	Course Name	Category	L	T	P	Credit
CS23SBGP	SBS I - Gen-AI	Theory	44	1	-	3

Preamble

The objective of this course is to understand the breadth and depth of Generative Artificial Intelligence (Gen AI) C and to impart knowledge on its ethical implications, practical applications, and emerging trends.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO Number	CLO Statement	Knowledge Level
CLO1	Understand the fundamental concepts and ethical considerations of Generative AI.	K2
CLO2	Apply AI principles in practical settings using basic AI tools and platforms	K3
CLO3	Develop advanced skills in specialized AI applications such as text analysis, natural language processing, and image recognition.	K3
CLO4	Explore emerging trends in AI, integrating advanced AI tools into diverse professional practices.	K4

Mapping with Programme Learning Outcomes

CLOs	PO1	PO2	PO3	PO4	PO5
CLO1	S	S	S	S	M
CLO2	S	S	S	S	S
CLO3	S	S	M	S	S
CLO4	S	M	S	M	S

S- Strong; M-Medium

SBS I: Gen-AI - CS23SBA1**(45 Hrs)****Unit 1: Introduction to Gen AI****(9 hours)**

Understanding Gen AI: Definition and scope of Gen AI - Overview of its applications in various fields - Introduction to essential skills needed for Gen AI. Ethical Considerations: Discussion on ethical guidelines and responsible use of AI - Understanding the impact of AI on society and individuals.

Hands-on Activity: Exploring AI Tools

- Working with appropriate content creation Gen-AI tools to engage with ChatGPT to explore various subjects, simulate interviews, or create imaginative written content.
- Working with appropriate writing and rephrasing Gen-AI tools to drafting essays on designated topics and refining the content with improved clarity, coherence, and correctness.

Unit 2: Basic AI Concepts**(8 hours)**

Introduction to AI: Basic concepts and terminology of artificial intelligence - Examples of AI in everyday life - Real-world examples of AI applications in different domains. Machine Learning Basics: Understanding the principles of machine learning - Overview of supervised and unsupervised learning.

Hands-on Activity: Simple AI Projects

- Working with appropriate educational content creation Gen-AI tools to generate quizzes and flashcards based on classroom material.
- Working with appropriate language learning Gen-AI tools to practice and enhance language skills through interactive exercises and games across multiple languages.

Unit 3: AI in Practice**(9 hours)**

Text Analysis and Natural Language Processing (NLP): Introduction to NLP concepts and techniques - Hands-on exercises analyzing text data and extracting insights. Image Recognition and Processing: Basics of image recognition algorithms and techniques - AI Tools for Text and Image Processing

Hands-on Activity: Text and Image Projects

- Working with appropriate image processing Gen-AI tools to experiment with AI-generated images.
- Working with appropriate object recognition Gen-AI tools to identify various objects such as text, images, products, plants, animals, artworks, barcodes, and QR codes.

Unit 4: AI for Productivity and Creativity**(9 hours)**

AI-enhanced Productivity and creativity Tools: Overview of productivity and creativity tools

enhanced with AI capabilities - Tips for integrating AI into daily tasks and workflows. AI and Jobs:
 Exploring how AI impacts jobs and industries - Discussion on opportunities and challenges
 - Exploration of AI-powered creative tools and applications.

Hands-on Activity: Productivity and Creativity

- Working with appropriate content creation Gen-AI tools to generate interactive videos / blog posts / art / drawing / music and storytelling experience.
- Working with appropriate resume generation Gen-AI tools to create professional resumes efficiently.

Unit 5: Future of Gen AI and Final Project

(9 hours)

Emerging Trends in Gen AI - Applications of Generative AI - Ethical and Societal Impact of Gen AI
 - Future Directions and Challenges - Case Studies in Generative AI.

Hands-on Activity: Trends in Gen AI

- Working with appropriate speech generation Gen-AI tools to customize synthetic speech for virtual assistance across different applications.
- Working with appropriate data analysis Gen-AI tools to perform data analysis, visualization, and predictive modeling tasks.
- Working with appropriate Gen-AI design tools to simplify the creation of visually appealing presentations.
- Working with appropriate website builder Gen-AI tools to develop professional websites with AI assistance.

Pedagogy

Demonstration of AI Tools, Lectures and Case studies.

Course Designers

Mrs. S. Ponmalar

COURSE CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
NM22DTG	DESIGN THINKING	THEORY	30	-	-	2

Preamble:

- To expose the students to the concept of design thinking as a tool for innovation
- To facilitate them to analyze the design process in decision making
- To impart the design thinking skills

Course Learning Outcome:

On the successful completion of the course, students will be able to:

CLO Number	CLO Statement	Knowledge Level
CLO1	Understand the concepts of Design thinking and its application in varied business settings	K1
CLO2	Describe the principles, basis of design thinking and its stages	K2

CLO3	Apply design thinking process in problem solving	K3
CLO4	Analyze the best practices of design thinking and impart them in business and individual day to day operations.	K4

Mapping with Learning Programme Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	M	M	S	S
CLO2	M	S	S	M	M
CLO3	S	S	S	M	S
CLO4	S	S	S	S	S

S-Strong; M-Medium

Syllabus

UNIT – 1 (6 Hours)

Design Thinking Overview: *Introduction to Design Thinking* and Design Research Strategies -***Design Thinking Skills***

UNIT – II (6 Hours)

Design Thinking Mindset: *Principles of Design Thinking - Basis for design thinking - Design Thinking Hats* - Design thinking team

UNIT – III (6 Hours)

Empathize: Definition - Listen & ***Empathize*** with the Customers and / or Users - Tools and Techniques

UNIT – IV (6 Hours)

Define : Definition - ***Defining the Problem*** - Tools and Techniques - Journey mapping and ***Ideate*** - definition - Ideation techniques

UNIT – V (6 Hours)

Prototype: Definition - ***Prototype*** Alternate Solutions - ***Test*** the Solutions - Visualization - Storytelling - Cautions and Pitfalls - Best Practices

*** Highlighted Content offered in Blended Mode (Link Provided)**

Link

Unit I

- <https://www.digimat.in/nptel/courses/video/10910%204109/L01.html>
- https://www.youtube.com/watch?v=b-9Id-Jt_PI

Unit II

- <https://youtu.be/6-NRiom8K9Y>
- <https://www.youtube.com/watch?v=bc-BvFQDmmk>

Unit III

- <http://acl.digimat.in/nptel/courses/video/109104109/L02.html>
- <http://acl.digimat.in/nptel/courses/video/109104109/L03.html>
- <https://youtu.be/ls2mqHs02B0>

Unit IV

- <http://acl.digimat.in/nptel/courses/video/10910410/L04.html>
- <https://youtu.be/veixQsRnZZU>
- <https://youtu.be/6-bDSKZJEAM>
- <http://acl.digimat.in/nptel/courses/video/109104109/L15.html>

Unit V

- <http://acl.digimat.in/nptel/courses/video/109104109/L16.html>
- <http://acl.digimat.in/nptel/courses/video/109104109/L17.html>
- <http://acl.digimat.in/nptel/courses/video/109104109/L18.html>
- <http://acl.digimat.in/nptel/courses/video/109104109/L19.html>

Text Books

S.No.	Author(s)	Title of the Book	Publisher	Year and edition
1.	Christian Mueller-Roterberg	Handbook of Design Thinking Tips& Tools for how to design thinking	Amazon Kindle Version	2018
2	Gavin AmbrosePaul Harris	Design Thinking	AVA Publishing Switzerland	2010
3	Sambhrant Srivastava and Vijay Kumar	A Text Book of DESIGN THINKING	Vayu Education of India	2022

Reference Books

S. No.	Author(s)	Title of the Book	Publisher	Year and edition
1	Maurício Vianna Ysmar Vianna Isabel K. Adler Brenda Lucena Beatriz Russo	Design Thinking - BusinessInnovation	MJV Press	2011
2	Moritz Gekeler	A practical guide to designthinking	Friedrich- Ebert- Stiftung	2019
3	J. Berengueres	The Brown Book of DesignThinking	UAE University College, Al Ain	2014