



PSGR Krishnammal College for Women



College of Excellence, **nirf** 2022 - 6<sup>th</sup> Rank  
Autonomous and Affiliated to Bharathiar University  
Reaccredited with A<sup>++</sup> 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)**

**BACHELOR OF COMMERCE WITH BUSINESS  
ANALYTICS**

**2021 – 2024 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.



		DA21C03	R Programming	CC	6	86	4	3	50	50	100	5
		TH21A16	Allied-Statistics II	GE	6	86	4	3	50	50	100	5
		DA21CP2	Computer Application Practical II – Analysis with SPSS & R	CC	4	57	4	3	50	50	50*	2
	IV		Open Course - Self Study Online Courses	-	-	-	-	-	-	-	-	2
		NME19B2 NME19A2	Basic Tamil II** Advanced Tamil II **	AEC	-	-	-	-	-	-	-	GR
	VI		Personality Development Programme	-	-	-	-	-	-	-	-	-
	III B	NM12GAW	General Awareness – Online Exam	Self study (Online)	-	-	-	-	100	-	100	GR
	V	21PECM1	Professional English for Commerce and Management	AEC	3	40	5	2	50	50	100	2
III	III	BP21C04	Business Management and Ethics	CC	5	71	4	3	50	50	100	4
		BP21C05	Principles of Marketing	CC	5	71	4	3	50	50	100	4
		DA21C06	Database Programming	CC	6	86	4	3	50	50	100	4
		EC21A02/ DA21A01	Allied Group 1. Business Economics 2. Corporate Governance	GE	5	71	4	3	50	50	100	5
		DA21CP3	Computer Application Practical III –Database Programming	CC	4	57	3	3	50	50	50*	2
		DA21SBP1/ DA21SBCE	Skill Based Subject 1 - JAVA Fundamentals Practical/ Course Era- Data Science and Statistics	SEC	3	43	2	2	40	60	100	3
	IV	NM21EVS	Foundation Course II Environmental Studies*	AECC	-	Self-Study Paper			100	-	100	Gr
		NM21UHR	Foundation Course III (Universal Human Values and Human Rights)*	AECC	2	26	4	-	100	-	100	2
			Job Oriented Course		-	60	-	-	--	--	--	Gr.

\*100 marks converted to 50

CC – Core Courses

GE – Generic Elective

AECC – Ability Enhancing Compulsory Course

\*\* outside regular class hours

CA – Continuous Assessment

ESE - End Semester Examination

SEC – Skill Enhancing Course

**BLOOM'S TAXONOMY BASED ASSESSMENT PATTERN:- 2021-2022 ONWARDS**

**CA I & II: (Theory & Accounts)**

Bloom's Category	Section	Marks		Total
Remember (K <sub>1</sub> ) Understand (K <sub>2</sub> ) Apply, Analyse (K <sub>3</sub> , K <sub>4</sub> )	A – 5x2 marks	10	1 or 2 sentences	50
	B- 4x5 marks	20	250 words	
	C – 2 out of 3x 10 marks	20	500 words	

**UG – End Semester Examination Pattern**

Bloom's Category	Section	Marks		Total
Remember (K <sub>1</sub> ) Understand (K <sub>2</sub> ) Apply, Analyse (K <sub>3</sub> , K <sub>4</sub> )	A – 11 out of 13x2 marks	22	1 or 2 sentences	100
	B- 5 out of 7x6 marks	30	300 words	
	C – 4 out of 6x 12 marks	48	600-800 words	

**WEIGHTAGE ASSIGNED TO VARIOUS COMPONENTS OF CONTINUOUS  
INTERNAL ASSESSMENT**

**Theory**

	CIA - I	CIA - II	Mode Exam	Assignment/ Class Notes	Seminar	Quiz	Class Participation	Application Oriented/ Inn./ Creativity Assignment	Attendance	Max. Marks
Core/ Allied	7	7	10	4	5	4	5	5	3	50

**Practical**

	Model Exam	Lab Performance (Practical + Interaction)	Regularity in Record Submission	Attendance	Maximum Marks
Core	15	24(12+12)	8	3	50

**Internal Pattern – Introduction to Entrepreneurship**

Foundation Course	CIA I	CIA II	Quiz	Assignment	Schemes for Entrepreneurs	Idea Pitch	Project (Business Plan Presentation)	Total Marks
	*50	*50	5	5	5	5	20	100

**\*CIA I and II –50 Marks(2 hrs)Each - 100 marks - Converted into 60 Marks**  
**Question paper pattern for CIA**

Section	Marks		Marks	Total
A –4 out of 6x5 marks	20	Paragraph answers	20	50
B-2 out of 3x15 marks	30	Essay type	30	

**RUBRIC ASSESSMENT TOOL ASSIGNMENT**  
**Maximum - 20 Marks (converted to 4 marks) – Scale 4 to 1**

Criteria	4 Marks	3 Marks	2 Marks	1 Mark
<b>Focus Purpose</b>	Clear	Shows awareness	Showslittle Awareness	No awareness
<b>Main idea</b>	Clearly presents a main idea.	Main idea supported Throughout	Vague sense	No main idea
<b>Organization: Overall</b>	Well planned	Good overall organization	There is a sense of organization	No sense of organization
<b>Content</b>	Exceptionally well presented	Well presented	Content is sound	Not good
<b>Style: Details and Examples</b>	Large amounts of specific examples and detailed Description	Some use of examples and detailed descriptions	Little use of specific examples and details	No use of examples

**SEMINAR**  
**Maximum - 20 Marks (converted to 5 marks) –Scale 4 to 1**

Criteria	4 Marks	3 Marks	2 Marks	1 Mark
<b>Focus Purpose</b>	Clear	Shows Awareness	Showslittle Awareness	No awareness
<b>Main idea</b>	Clearly presents a main idea.	Main idea supported throughout	Vague sense	No main idea
<b>Organization: Overall</b>	Well planned	Good overall organization	There is a sense of organization	No sense of organization
<b>Content</b>	Exceptionally well presented	Well presented	Content is sound	Not good

<b>Style:</b> Details and Examples	Large amounts of specific examples and detailed description	Some use of examples and detailed descriptions	Little use of specific examples and details	No use of examples
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### CLASS PARTICIPATION

**Maximum - 20 Marks (converted to 5 marks) – Scaled from 5 to 1**

<b>Criteria</b>	<b>5 Marks</b>	<b>4 Marks</b>	<b>3 Marks</b>	<b>2 Marks</b>	<b>1 Mark</b>
<b>Level of Engagement in Class</b>	Student proactively contributes to class by offering ideas and asks questions more than once per class.	Student proactively contributes to class by offering ideas and asks questions once per class	Student contributes to class and asks questions occasionally	Student rarely contributes to class by offering ideas and asking no questions	Student never contributes to class by offering ideas
<b>Listening Skills</b>	Student listens when others talk, both in groups and in class. Student incorporates or builds off of the ideas of others.	Student listens when others talk, both in groups and in class.	Student listens when others talk in groups and in class occasionally	Student does not listen when others talk, both in groups and in class.	Student does not listen when others talk, both in groups and in class. Student often interrupts when others speak.
<b>Behavior</b>	Student almost never displays disruptive behavior during class	Student rarely displays disruptive behavior during class	Student occasionally displays disruptive behavior during class	Student often displays disruptive behavior during class	Student almost always displays disruptive behavior during class
<b>Preparation</b>	Student is almost always prepared for class with required class materials	Student is usually prepared for class with required class materials	Student is occasionally prepared for class with required class materials	Student is rarely prepared for class with required class materials	Student is almost never prepared for class.

## QUIZ

Maximum - 20 Marks (converted to 4 marks)

### APPLICATION ORIENTED/INNOVATION/CREATIVITY ASSIGNMENT

Criteria	Originality	Presentation	References or Library resources	Total Marks
Marks	2	2	1	5

### BLOOM'S TAXONOMY BASED ASSESSMENT PATTERN:- 2022-2023 ONWARDS

#### CIA I & II Question Paper Pattern: 2 x 25 = 50 Marks

One question from each unit with each question comprising of

- Two questions with a weightage of 2 marks (no choice)
- Two questions with a weightage of 6 marks (no choice)
- One question with weightage of 9 marks (Internal Choice at the same CLO level)

#### UG ESE Question Paper Pattern: 5 x 20 = 100 Marks

One question from each unit with each question comprising of

- One question with a weightage of 2 marks (no choice)
- One question with a weightage of 6 marks (Internal Choice at the same CLO level)
- One question with weightage of 12 marks (Internal Choice at the same CLO level)

#### UG ESE Question Paper Pattern (Accounts Subjects): 5 x 20 = 100 Marks

- One question from each unit with each question comprising of
- One question with a weightage of 2 marks (no choice)
- One question with a weightage of 6 marks (no choice)
- One question with weightage of 12 marks (Internal Choice at the same CLO level)



**MAPPING OF PLOs WITH CLOs**

COURSE	PROGRAMME OUTCOMES				
	PLO1	PLO2	PLO3	PLO4	PLO5
<b>COURSE-BP21CO1</b>					
CLO1	S	S	S	S	M
CLO2	S	S	S	S	M
CLO3	S	S	S	S	M
CLO4	S	S	S	S	M
<b>COURSE – DA21CO2</b>					
CLO1	S	S	M	S	M
CLO2	S	S	L	S	S
CLO3	M	M	S	S	M
CLO4	S	L	M	S	S
CLO5	M	S	M	M	S
<b>COURSE – DA21CP1</b>					
CLO1	S	M	L	L	M
CLO2	S	S	S	S	S
CLO3	S	S	M	M	S
CLO4	S	M	M	L	S
CLO5	S	S	M	M	S
<b>COURSE – DA21CO3</b>					
CLO1	S	S	M	S	S
CLO2	S	M	S	S	M
CLO3	M	S	S	M	M
CLO4	S	M	S	S	M
CLO5	M	S	S	M	M
<b>COURSE – DA21CP2</b>					
CLO 1	S	S	M	S	S
CLO2	S	M	M	S	M
CLO3	S	M	L	M	S
CLO4	S	L	L	S	M
<b>COURSE – BP21C04</b>					
CLO1	S	S	S	S	S
CLO2	S	S	S	M	S
CLO3	S	S	M	S	S
CLO4	S	S	M	M	M

<b>COURSE – BP21C05</b>					
<b>CLO1</b>	S	S	S	S	M
<b>CLO2</b>	S	S	S	S	M
<b>CLO3</b>	S	S	S	S	M
<b>CLO4</b>	S	S	S	S	M
<b>COURSE – DA21C06</b>					
<b>CLO1</b>	S	S	S	S	M
<b>CLO2</b>	S	S	S	S	S
<b>CLO3</b>	M	S	S	S	M
<b>CLO4</b>	M	M	S	S	M
<b>COURSE – EC21A02</b>					
<b>CLO1</b>	S	M	S	S	S
<b>CLO2</b>	S	S	S	S	L
<b>CLO3</b>	S	M	S	M	S
<b>CLO4</b>	S	M	S	M	S
<b>COURSE – DA21A01</b>					
<b>CLO1</b>	S	S	S	M	S
<b>CLO2</b>	S	S	S	S	M
<b>CLO3</b>	S	S	S	S	S
<b>CLO4</b>	S	S	S	S	S
<b>COURSE – DA21CP3</b>					
<b>CLO1</b>	S	S	S	S	L
<b>CLO2</b>	S	S	S	S	L
<b>CLO3</b>	S	S	S	S	L
<b>CLO4</b>	S	M	M	M	L
<b>COURSE – DA21SBP1</b>					
<b>CLO1</b>	S	S	L	M	M
<b>CLO2</b>	S	M	M	S	M
<b>CLO3</b>	S	M	L	M	S
<b>CLO4</b>	S	M	M	M	S

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
BP21C01	PRINCIPLES OF ACCOUNTING	THEORY	56	4	-	4

### Preamble

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

### Course Learning Outcomes

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

CLO Number	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	Analyse and prepare financial accounting reports to interpret the performance of a firm	K4

### Mapping with Programme 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

S- Strong; M-Medium; L-Low

### Syllabus

**Unit I** (11 Hrs)

Basic Accounting Concepts- Final Accounts- Bank Reconciliation Statement

**Unit II** (11 Hrs)

Bills of exchange (trade bills only) -Joint Venture (AS-27)

**Unit III** (11 Hrs)

Branch Accounts (Dependent Branches - Debtors and Stock & Debtors System– Independent Branches only)

**Unit IV****(12 Hrs)**

Hire purchase Accounts – Royalties (AS-19) (excluding sublease)

**Unit V****(11 Hrs)**

Depreciation (excluding change in method of depreciation) - Departmental Accounts- Basis for allocation of expenses

**Distribution of Marks: Theory 20% and Problems 80%.****Text Book**

S. No	Authors	Title	Publishers	Year of Publication
1.	Reddy T S & A Murthy	Financial Accounting	Margham Publications	Reprint, 2015
2.	Jain S.P & Narang K.L	Principles of Accountancy	Kalyani Publishers	2018

**Reference Books**

S. No	Authors	Title	Publishers	Year of Publication
1.	RL Gupta & Radhasamy	Advanced Accountancy (Vol I)	Sultan Chand & Sons.	2018, 13 <sup>th</sup> Edition
2.	MC Shukla, T.S. Grewal & S.C. Gupta	Advanced Accountancy	S. Chand & sons	2013 Edition

**Pedagogy**

Lecture, PPT, e-content, Seminar, Assignment, Quiz &amp; Group discussion

**Skill Components**

- Assignment on concepts and conventions of Financial Accounting within the framework of Ind AS and IFRS.
- Preparation of Journal, Ledger and trial balance as per Ind AS 8 and 10.
- Analysing financial statements of a company and present a summary

**Course Designers:**

1. Mrs.R.Jayasathya
2. Mrs.NithyaRamadass

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA21C02	FUNDAMENTALS OF BUSINESS ANALYTICS	Theory	56	4	-	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 underlying business process.
- To exhibit knowledge of data analysis techniques and to apply principles of data sciences integrating enterprise reporting.

### Prerequisite

- Basic knowledge in computers

### Course Learning Outcomes

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

CLO Number	CLO Statement	Knowledge Level
CLO1	To identify with meaning and importance of business analytics and data science in business process and industry	K3
CLO2	To outline data integration, projecting, maintenance, designing and modeling of various data techniques	K2
CLO3	To Analyze the business views using IT applications, its purpose and analyzing various concepts relating to it and inculcate problem solving and decision-making skills	K4
CLO4	To Illustrate the concepts of Datawarehouse, data profiling, data dimension, mobility and various related systems and their applications in different industries	K2
CLO5	To Experiment with business intelligence concepts, Industrial concepts 4.0 for enterprise reporting, industry impact on multiple factors, its sources and their implementation	K3

### 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
CLO5	M	S	M	M	S

S- Strong; M-Medium; L-Low

### Syllabus

#### Unit I

(11 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

(11 Hrs)

**Business view of Information Technology Applications:** Core business process – Baldrige Business Excellence framework - Key purpose of using IT in business - 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.

**Unit III****(12 Hrs)**

**Introduction to OLTP and OLAP** – OLTP – 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 value chain – Introduction to Business Analytics. **BI Definitions and Concepts** – BI Component Framework – Need for BI – BI Users – Business Intelligence applications – BI roles and responsibilities.

**Unit IV****(12 Hrs)**

**Data Integration** – Data Warehouse – Goals – Data sources – Extract – Transform, Load – Data Integration – Technologies – Data Quality maintenance – Data profiling. **Data Modelling** – 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 Book**

S. No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	RN Prasad and Seema Acharya	Fundamentals of Business Analytics	Wiley	2016, 2 <sup>nd</sup> Edition
2.	P. Kaliraj and 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	2015 Revised Edition
2.	Pang-Ning Tan Michael Steinbach, Vipin Kumar	Introduction to Data Mining	Pearson Education	2021 Second Edition

**Related Online Contents:**

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

**Skill Component**

- Determine the concepts of business analytics and business process.
- 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.U.Sheeba

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA21CP1	Computer Application Practical I –Analysis With Excel	Practical	-	3	27	1

### Preamble

- To inculcate 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

CLO Number	CLO Statement	Knowledge Level
CLO1	To understand and find commands in Excel, Get an head start with templates and set up 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
CLO5	Analyze a program using appropriate analytical tool and Advance use of Pivot table features like Value field Setting, Grouping data and slicers among others	K4

### Mapping with Programme 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
CLO5	S	S	M	M	S

S- Strong; M-Medium; L-Low

## Syllabus

1. 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
2012	59.77
2013	121.19
2014	188.75
2015	135.81
2016	256.88
2017	337.41

- Enter the data, as shown, into a worksheet 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?
2. In your position as research assistant to a portfolio manager, you need to analyse 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.
3. 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

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



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

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

a) Calculate the ratio of each years' 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  $\$2,000.82/\$2,082.76 = 0.9607$ .

b) 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  $-3.93\%$ .

c) 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.

d) 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.

e) 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)?

f) 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

5. Cash budget using What If Analysis

6. Using Goal Seek to calculate Break Even Points

7. Sensitivity analysis of Capital Budgeting – Scenario Analysis, NPV Profile Charts
8. 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.
9. Analyzing Datasets with Tables and Pivot Tables

## Pedagogy

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

## Course Designers

1. Dr. M.Rajeswari
2. Mrs.S.Aruna

### SEMESTER – I - FOUNDATION COURSE

COURSE NUMBER	COURSE NAME	Category	L	T	P	Credit
NME21ES	INTRODUCTION TO ENTREPRENEURSHIP	Theory	26	4	-	2

#### Unit 1 : (5 hrs)

##### Nature of Entrepreneurship:

(3 hrs)

Meaning –Need for Entrepreneurship –Qualities of Successful Entrepreneurs - Myths of Entrepreneurship

Activity: Assignment, Discussion

(2 hrs)

#### Unit 2: (6 hrs)

##### Role of Entrepreneurs

(4 hrs)

Significance of Entrepreneurship to the nation –Environmental Factors influencing Entrepreneurship – Entrepreneurial Process and Functions- Challenges faced by Entrepreneurs

Activity: Quiz / Role Play

(2 hrs)

#### Unit 3: (6 hrs)

##### Formulation of Business Idea:

(4 hrs)

Business Idea Generation - Entrepreneurial Imagination and Creativity – Role of Innovation – Opportunity Evaluation

Activity: Business Idea Pitch

(2 hrs)

#### Unit 4: (6 hrs)

##### Business Planning:

(4 hrs)

Need for Market Study – Securing Finance from various Sources - Significance of Business plan – Components of Business plan

Activity: Schemes available for Entrepreneurs

(2 hrs)

#### Unit 5: (7 hrs)

##### Project:

Interface with Successful Entrepreneurs – 4 hrs

Business Plan Presentation – 3 hrs

## Reference Books

1. D.F. Kuratko and T.V. Rao, Entrepreneurship - South Asian Perspective, 2016, Cengage Learning India Pvt. Ltd. Delhi.
2. Arya Kumar, Entrepreneurship: Creating and Leading an Entrepreneurial Organization, 2012, Pearson Education India

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA21C03	R PROGRAMMING	CORE	86	4	-	5

### Preamble

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

CLO No.	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	K2 and K3

### Mapping with Programme Outcomes

CLOs	PLO1	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
CLO5	M	S	S	M	M

S- Strong; M-Medium; L-Low

### Syllabus

#### UNIT I

(17Hrs)

An overview of R: Introduction to R expressions, variables, and functions- operators- data types- 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 (17Hrs)**

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 (17Hrs)**

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

**UNIT IV (18Hrs)**

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 (17Hrs)**

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.

**TextBooks:**

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

**Books for Reference:**

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

**Related Online Contents:**

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 Component

- 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

### Pedagogy

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

### Course Designers

1. Mrs. S. Manasha
2. Dr.M.Rajeswari

COURSE NUMBER	COURSENAME	CATEGORY	L	T	P	CREDIT
DA21CP2	Computer Application Practical II – ANALYSIS WITH SPSS & R	Practical	57	-	4	2

### Preamble

- To explore and acquire skills in SPSS and R Programming

### Prerequisite

- Basic knowledge of Computers

### Course Learning Outcomes

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

CLO Number	CLO Statement	Knowledge Level
CLO1	Relate the fundamental programming concepts of R	K1
CLO2	Classify SPSS and R Statistical tools to problems	K2
CLO3	Analyze and construct the techniques to data sets	K3 and K4
CLO4	Examine the approach to deal with data	K4
CLO5	Analyze the statistical formula to incorporate with R-programming	K4

### Mapping with Programme Outcomes

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

S- Strong; M-Medium; L-Low

## Syllabus

1. Find Factorial of a number using recursion
2. Write program to calculate Multiplication Table using R
3. Check if a Number is Positive, Negative or Zero
4. Creating vector and matrices using R-program.
5. Import and Visualize data using scatterplots
6. Logical statements, cbind/rbind command in R and Create dataset using data frames and factors and plot a graph.

## R and SPSS

7. Create an SPSS and R Dataset and determine the number of 18–22-year-old population in 2000, 2004 and 2005

<b>PARTICULARS</b>	<b>2000</b>	<b>2004</b>	<b>2005</b>
UNIVERSITY STUDENT	47498	66309	70153
NUMBER OF TEACHERS	17302	19103	18098
NUMBER OF INSTITUTIONS	77	91	90
NUMBER OF STUDENTS IN THE % OF THE 18-22 YEAR-OLD POPULATION	10.4	13.9	15

8. The data below are about the number of tourists in Hungary between 1988 and 1994.

<b>Year</b>	<b>Quarters</b>	<b>Number of tourists (thousand persons)</b>	<b>Year</b>	<b>Quarters</b>	<b>Number of tourists (thousand persons)</b>
1988	1	687.5	1990	4	1061.2
1988	2	944.7	1991	1	839
1988	3	1212.8	1991	2	1446
1988	4	999.4	1991	3	2274.7
1989	1	839.8	1991	4	1281.5
1989	2	1126.6	1992	1	868.1
1989	3	1423.4	1992	2	1374
1989	4	1164.8	1992	3	1823.9
1990	1	896.2	1992	4	1319.3
1990	2	1307.8	1993	1	854
1990	3	1887.8			

- a. Is there any trend in this model? (Normality test)
  - b. Create a graph from the time series!
  - c. Which seasonal decomposition should you use? Why?
  - d. Do a seasonal decomposition! Analyze the parameters and the seasonal factors!
  - e. Create graphs from the seasonal factors (saf\_1, sas\_1, stc\_1)!
  - f. Determine the number of tourists for the 2nd, 3rd and 4th quarter of 1993!
9. Open the Employee\_data.sav file! and analyse the following in SPSS and R  
Transform / Select Data
    - a. What is the proportion of custodials?
    - b. What is the proportion of women within managers?

## Graphs

Create a column diagram about the proportion of employees grouped by gender! Embellish the graph! Put the value of proportions into the chart!

- a) Transform this column diagram into a pie chart!
- b) Create a scatter plot about month since hire and beginning salary if you set markers by gender! Embellish the graph!
- c) Create a scatter plot about month since hire and previous experience if you set marker sby employment category! Embellish the graph!
- d) Define simple box plot about previous experience! Embellish the graph!
- e) Define simple box plot about the month since hire categorized by the employment category! Embellish the graph!
- f) Define box plot about the previous experience categorized by the employment category clustered by gender! Embellish the graph!
- g) Create a graph to test the normal distribution of beginning salary!
- h)

## Central Tendencies, Measures of Distribution, Measures of Asymmetry

- a) Define the central tendencies of month sincehire!
- b) Define the characteristics of distribution of previous experience!
- c) What is the average salary of employees belonging to the minority?

## Correlation and Linear Regression

Is there any relation between previous experience and month since hire?

- b) Determine a linear relation between the month since hire and previous experience of employees!
- c) Define a 90% confidence interval for its  $b_0$  and  $b_1$  parameters!
- d) Define a 90% confidence interval for the y variable!
- e) Open the Cars.savfile!

## Transform / Select Data

- a)How old are the cars? Create a new variable as age!
- b) What is the ratio of American, European and Japanese cars within cars with higher consumption than 20 miles per gallon?
- c) What is the ratio of those American cars which have 4-6-8cylinders?

## 10. Estimation and Hypothesis Testing

- a)Define a 95% confidence interval for the vehicle weight!
- b) Define a 90% confidence interval for the horsepower!
- c) Define a 98% confidence interval for the time to accelerate!
- d) Test the hypothesis that the average consumption of cars is 20 miles per gallon! ( $\alpha= 5\%$ )
- e) Use One Sample T Test to determine whether or not the average miles pergallon significantly differ from 24 at 10% significance level!
- f) Test the hypothesis that the average horsepower of cars is 100! ( $\alpha=5\%$ )
- g) Test the hypothesis that the average consumption of Japanese and American cars is the same! ( $\alpha=5\%$ )
- h) Test the hypothesis that the average consumption of European and American carsis the same! ( $\alpha=10\%$ )
- i) Check if the horsepower follows a normal distribution or not!

## Statistical Dependence

- a) Create a crosstab from the model year and the country of origin!
- b) Create a crosstab from the number of cylinders and the country of origin!
- c) Is there any relationship between the country of origin and engine displacement?
- d) Is there any relationship between the country of origin and horsepower?
- e) Is there any relationship between the country of origin and vehicle weight?

## Pedagogy

- Demonstration through System, Demonstration through PPT

## Course Designer

1. Mrs.S.Manasha
2. Dr.M.Rajeswari

COURSE NUMBER	COURSE NAME	Category	L	T	P	Credit
21PECM1	PROFESSIONAL ENGLISH FOR COMMERCE AND MANAGEMENT	Theory	40	5	-	2

## Preamble

- To develop the language skills of students by offering adequate practice in professional contexts.
- To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year physical sciences students
- To focus on developing students' knowledge of domain specific registers and the required language skills.
- To develop strategic competence that will help in efficient communication
- 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

CLO Number	CLO Statement	Knowledge Level
CLO1	Recognise 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 Learning Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	S	M	L	M	S	L
CLO2	S	M	L	M	S	L
CLO3	S	S	L	S	S	M
CLO4	S	S	L	M	S	M
CLO5	S	M	L	M	S	M

S- Strong; M-Medium; L- Low

## Syllabus

### UNIT 1: COMMUNICATION

8 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

8 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

8 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

8 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

8 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

### Textbook

S.No.	Authors	Title of the Book	Publishers	Year of Publication
1	TamilNadu 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	Sreedharan, 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
BP21C04	BUSINESS MANAGEMENT AND ETHICS	CORE	71	4	-	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 functions	K2
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 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; L-Low

### 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

(14 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

(14 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**

**Text Books**

S.No.	Authors	Title	Publishers	Year and Edition
1.	RK 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 of Publication
1.	Dr.C.N.Sontakkai	Principles of Management	Kalyani Publishers,	2016 reprint
2.	P.C.Tripathi & P.N Reddy	Principles of Management	Tata Mcgraw Hill Publishing Co Ltd	2017 ed.
3.	Robbins, De Cenzo, & Coulter.	Fundamentals of Management	Pearson Education Ltd	10th Ed. 2017

**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
BP21C05	PRINCIPLES OF MARKETING	CORE	71	4	-	4

**Preamble**

- To understand how organizations identify customers and their wants/needs.
- To comprehend marketing decisions, based upon the combination of product, price, promotion,

and distribution elements.

- To learn and to understand E-Marketing and its strategies.

### Prerequisite

- No prerequisite knowledge required.

### Course Learning Outcomes

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

CLOs	CLO Statement	Knowledge Level
CLO1	Identify marketing and market driven enterprises	K1
CLO2	Examine the basic elements of the marketing mix and to provide a framework to evaluate marketing decisions and initiatives	K2
CLO3	Formulate marketing strategies for products and services	K3
CLO4	Analysing the recent marketing strategies	K4

### Mapping with Programme 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

S- Strong; M-Medium; L-Low

### Syllabus

#### UNIT I

(DL hrs=14)

Market: - Meaning, Definition, \*Classification of Markets. Marketing:- Meaning, Definition, Features, Importance, Evolution and Functions of Marketing\*- Difference between Marketing and Selling. Marketing Environment: -Micro and Macro Marketing Environment, Controllable and Uncontrollable Factors- Modern Marketing Concepts –\*Marketing Mix – Definition and Elements – Market Segmentation.\*

#### UNIT II

(DL hrs=14)

Product: - Meaning, Definitions – Elements of Product Policy and Branding Strategies –\*Product Life Cycle and New Product Planning\*.Price: - Meaning, Definition, Importance,\*Factors affecting pricing decisions\*, Kinds of Pricing.

#### UNIT III

(DL hrs=15)

Promotion Mix: - Sales Promotion, Meaning, Definition, Objectives, Advantages and Kinds of Sales Promotion. Advertising: - Meaning, Definition, Functions, Objectives, Advantages, Kinds of Advertising Media. Personal Selling: - Meaning, Definition, Objectives, Importance,\*Qualities of a Good Sales Man\*, Features and\*Process of Personal Selling\*.Channels of Distribution- Meaning, Definition, Importance, Types,\*E-Channels of distribution - Factors Determining Choice of Channel of Distribution\*.

#### UNIT IV

(DL hrs=14)

\*Rural Marketing: - Meaning, Definition, Nature and Types\* - Agricultural Marketing in India –

Types of agricultural goods - Problems and Remedies,\***Regulated Markets-Functions and Advantages**\*.Organized Markets - Characteristics, Commodity Exchange - Future Contracts – Hedging.\***Co-operative Marketing - Objectives – Features – Functions - Advantages and Limitations**\*.

## UNIT V

(DL hrs=14)

\***E-Marketing – Difference between e-marketing and e-business**\* – E-Marketing past, present and future.–. E-Marketing plan: overview – Creating- Steps in E-marketing plan.\***Services Marketing-Meaning and definition of service – Characteristics of service and types of services**\*.Relationship Marketing –\***International Marketing – Objectives, Importance and policies**\*.

\***Highlighted Content offered in Blended Mode**

### Text Books

S.No.	Author Name	Book Name	Publisher	Year and Edition
1.	Pillai R.S.N. and Bagavathi	Modern Marketing Principles and Practices	S.Chand& Co. New Delhi	4 <sup>th</sup> Revised Edition (Reprint 2017)
2.	J P Mahajan	Principles of Marketing	Vikas Publishing House Pvt Ltd	2 <sup>nd</sup> Edition,2017.

### Reference Books

S.No.	Author Name	Book Name	Publisher	Year and Edition
1.	Gupta C.B., Rajan Nair N.	Marketing Management	Sultan Chand and Sons, New Delhi	2018 Edition
2.	Philip Kotler, Gary Armstrong, Lioys C. Harris	Principles of Marketing	Pearson	8 <sup>th</sup> Edition, 2020

### 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

### Pedagogy

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

### Course Designers

1. Dr.R.Jayasathya
2. Mrs.M.Prem Grace

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA21C06	DATABASE PROGRAMMING	CORE	86	4	-	4

### 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 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; L-Low

### Syllabus

#### Unit I

(18 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-Creating Tables- Describing the structure of a Table-Populating tables.

#### Unit II

(17 Hrs)

Functional Dependencies-Normalization process: 1NF- 2NF-3NF-BCNF. **\*The E-R Model- Entities and Attributes-Relationships\***- Normalizing the Model-Table Instance Charts- Implementation of the selection Operator-**\*Using aliases to control column Headings- Implementation of the projection and join Operators\***-Creating foreign keys and primary keys and check constraints-adding and modifying Columns-Removing constraints from a table

#### Unit III

(17 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- Introduction to PL/SQL-user defined Functions-Triggers-Stored procedures\***

#### Unit IV

(17 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, Integration, Impedance Mismatch, Application and Integration Databases, Attack of the Clusters, The Emergence of NoSQL. Aggregate Data Models: **\*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 – Querying – **\*Designing Your Application: Indexing - Special Index and Collection Types\*** – Aggregation

#### Unit V

(17 Hrs)

Introduction to WEKA – The Explorer – **\*Getting started\*** – Exploring the explorer – **\*Filtering algorithm\***

**\*Highlighted Content offered in Blended Mode**

#### 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, 2 <sup>nd</sup> edition
2.	Pramod J. Sadalage & Martin Fowler. Kristina Chodorow	NoSQL Distilled MongoDB: The definitive guide	Pearson Education, Inc. O'Reilly Media, Inc.,	2013 2013, 2 <sup>nd</sup> Edition
3.	Eibe Frank, Mark A. Hall, and Ian H. Witten <b>Unit: 5</b>	The WEKA workbench	Morgan Kaufmann	2016, 4 <sup>th</sup> Edition

#### Reference Books

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

### Pedagogy

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

### Course Designers

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

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
EC21A02	BUSINESS ECONOMICS	ALLIED	71	4	-	5

### Preamble

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

### Prerequisite

- Basic knowledge in economics

### Course Outcomes

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

CLOs	CLO Statement	Knowledge Level
CLO1	Define and understand the various laws and concepts of economics	K1
CLO2	Demonstrate and interpret different market structure, utility, production and pricing methods	K2
CLO3	Identify and develop economic theories and public finance system.	K3
CLO4	Analyse the functioning of economy at the macro level.	K4

### Mapping with Programme Outcomes

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

CLO3	S	M	S	M	S
CLO4	S	M	S	M	S

S- Strong; M-Medium; L-Low

## 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 – **\*Time and Discounting Principles – Concept of Efficiency\***

### Unit II

(14 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

(14 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 – Gross Domestic 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\*** - Effect of taxation on production and distribution - Deficit financing system

### 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 – **\*Finances of the union and the states – The Finance commission\*** – Importance of the budget.

**\*Highlighted Content offered in Blended Mode**

## Text Books

Sl.No.	Author Name	Title of the book	Publisher	Year and Edition
1	Sundharam KPM, Sundharam E N	Business Economics	Sultan Chand & Sons - New Delhi – 02	2015 Edition
2	Shankaran S	Business Economics	Margham Publications, Chennai - 17	2012, 3 <sup>rd</sup> Edition
3	Francis Cherunilam	Business Environment	Himalaya Publishin House, Mumbai – 04	2017, 25 <sup>th</sup> 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	2015 Edition
2	Mehta P.L	Managerial Economics–Analysis, Problems & Cases	Sultan Chand & Sons - New Delhi – 02.	2015, 14 <sup>th</sup> Edition

## Course Designers

1. Dr.A.Karthika
2. Dr. S. Yesodha

COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA21A01	CORPORATE GOVERNANCE	ALLIED	71	4	-	5

## Preamble

- To analyse 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 able to

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 Outcomes

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	S	S	S	M	S

<b>CLO2</b>	S	S	S	S	M
<b>CLO3</b>	S	S	S	S	S
<b>CLO4</b>	S	M	S	S	S

S-Strong; M-Medium; L-Low

## Syllabus

### UNIT I

(14 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

(14Hrs)

**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 – **\*Need for 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**

## Text Book

S.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Swami Parthasarathy	Corporate Governance	Biztantra , New Delhi	5 <sup>th</sup> 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 <sup>th</sup> Edition, 2006
2.	Singh. S	Corporate Governance	New Delhi: Excel Books	3 <sup>rd</sup> 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

### Pedagogy

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

### Course Designers

1. Mrs.S.Manasha
2. Dr.Mallika Haldorai

COURSE NUMBER	COURSENAME	CATEGORY	L	T	P	CREDIT
DA21CP3	COMPUTER APPLICATION PRACTICAL III – DATABASE PROGRAMMING	Practical	-	3	57	2

### Preamble

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

### Course Outcomes

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

CLO Number	CO 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 Outcomes

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

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:

- Insert values and display the records
- 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 values:

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>=1000and DA<=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)
Table: Book	
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".

7. Create Orders table and customers table with following fields:

Table: order	
Orderid	number(10)
Customerid	number(5)
Orderdate	date
Table: customers	
Customerid	number(5)

Custname	varchar2(10)
Contactname	varchar2(10)
Country	varchar2(10)

- Perform INNERJOIN, that selects records that have matching values in both tables
- Perform LEFTJOIN, that selects records that have matching values in both tables
- Perform RIGHTJOIN, that selects records that have matching values in both tables

8. Create Customer Table and supplier table with following fields:

Table: Customer

cusid	number(10)
FirstName	varchar2(10)
LastName	varchar2(10)
City	varchar2(10)
Country	varchar2(10)
Phone	number (10)

Table: Supplier

Supid	number(10)
Company Name	varchar2(10)
ContactName	varchar2(10)
City	varchar2(10)
Country	varchar2(10)
Phone	number(10)
Fax	number(10)

- Insert the records into the table customer and supplier.
- Describe the structure of the tables.
- List details of customer table and supplier table.
- Perform full outer join from customer on supplier table order by country

### **MONGODB:**

- Create a Student Database in MongoDB using “use” Command.
- Create program using CRUD operation using MongoDB.
- Create program text search and indexes using MongoDB.
- Create the replica set in the Mongoshell and test the configuration

### **WEKA:**

- Demonstration of preprocessing on dataset student.arff
- Demonstration of classification rule process on dataset employee.arff using J48 algorithm
- Demonstration of clustering rule process on dataset iris.arff using simple K-means
- Demonstration of association rule process on dataset test.arff using Apriori algorithm.

### **Pedagogy**

- Demonstration through System, Demonstration through PPT

### **Course Designers**

- Dr.S.Krishnaveni
- Dr.M.Rajeswari



COURSE NUMBER	COURSE NAME	CATEGORY	L	T	P	CREDIT
DA21SBP1	Skill Based Subject 1 - JAVA Fundamentals Practical	SBS - Practical	-	2	43	3

### Preamble

- To explore and acquire skills in Java Programming

### Prerequisite

- Basic knowledge of Computers

### Course Outcomes

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

CLO Number	CO Statement	Knowledge Level
CLO1	Show the fundamental programming concepts of Java	K1
CLO2	Demonstrate the classes and objects	K2
CLO3	Identify the various operations in Java	K3
CLO4	Apply the concepts of functions and methods	K4

### Mapping with Programme Outcomes

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

S-Strong; M-Medium; L-Low

### Syllabus

- Write a program to find Fibonacci series without using Recursion.
- Create a Java a program to Reverse a Number using while loop.
- Write program to check whether the number is Positive or Negative.
- Write a Java program that compute Sum of Natural Numbers.
- Write a Java program for Sorting Arrays.
- Create a Java program to multiply two Matrices.
- Write a Java program to count the total number of Characters in a String.
- Write a Java program to check whether the input year is leap or not.

9. Write a Java program to print right triangle Star Pattern
10. Create a Java program to calculate Area of Rectangle

### **Pedagogy**

Demonstration through System, Demonstration through PPT

### **Course Designers**

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