UNDER GRADUATE PROGRAMME – B.Com Business Analytics

UG SCHEME OF EXAMINATIONS: CBCS PATTERN

(For the candidates admitted from the academic year 2023-2024 onwards)

SEMESTER	PART	COURSE CODE	TITLE OF THE COURSE	NATURE OF COURSE	INS HOURS	CREDIT POINTS	EXAM DURATION	EXAM MARKS		
								CIA	ESE	TOTAL
I	I	23UTAM101	TAMIL COURSE I	LAN	6	3	3	25	75	100
		23UHIN101	HINDI COURSE I							
		23UFRE101	FRENCH COURSE I							
	II	23UGEN101 23UAEN101	GENERAL ENGLISH I ADVANCED ENGLISH I	ENG	6	3	3	25	75	100
	III	23UCB1C01 23UCO1C01/ 23UCC1C01/ 23UCE1C01	CORE:FINANCIAL ACCOUNTING – I **(*Employability & Skill Development)***	CC	6	4	3	25	75	100
	III	23UCB1C02	CORE: FUNDAMENTALS OF BUSINESS ANALYTICS ***(Entrepreneurship)***	CC	5	3	3	20	55	75
	III	23UCB1A01/ 23UCO1A01/ 23UCE1A01/	ALLIED: BUSINESS ECONOMICS	GEN	5	4	3	20	55	75
	IV	15UVAL101	VALUE EDUCATION	AEC	2	2	2	-	50	50
II	I	23UTAM202	TAMIL COURSE II	LAN	6	3	3	25	75	100
		23UHIN202	HINDI COURSE II							
		23UFRE202	FRENCH COURSE II							
	II	23UGEN202	GENERAL ENGLISH II	ENG	6	3	3	25	75	100

		23UAEN202	ADVANCED ENGLISH II							
	III	23UCB2C03/ 23UCO2C03/ 23UCC2C03/ 23UCE2C03	CORE:FINANCIAL ACCOUNTING -II **(*Employability & Skill Development)***	CC	6	4	3	25	75	100
	III	23UCB2C04	CORE: PYTHON PROGRAMMING **(*Employability & Skill Development)***	CC	5	3	3	20	55	75
	III	23UCB2A02	ALLIED: STATISTICS USING R TOOLS	GEN	5	4	3	20	55	75
	IV	21UENS202	ENVIRONMENTAL STUDIES	AEC	2	2	2	-	50	50
III	**I**	23UTML303	TAMIL COURSE III	LAN	4	3	3	25	75	100
		23UHDI303	HINDI COURSE III							
		23UFRH303	FRENCH COURSE III							
	II	23UGEL303 23UAEL303	GENERAL ENGLISH III ADVANCED ENGLISH III	ENG	4	3	3	25	75	100
	III	23UCB3C05/ 23UCO3C05/ 23UCC3C04/ 23UCE3C05	CORE: PARTNERSHIP ACCOUNTING **(*Employability& Skill Development)***	CC	5	5	3	25	75	100
	III	23UCB3C06	CORE: BUSINESS DATA MINING **(*Employability & Skill Development)***	CC	4	3	3	20	55	75
	III	23UCB3CP1	CORE: PRACTICAL 1 – PYTHON PROGRAMMING **(*Employability & Skill Development)***	CC	2	3	3	30	45	75
	III	23UMA3A17	ALLIED: BUSINESS MATHEMATICS	GEN	5	4	3	20	55	75
	IV	22UBTA301	BASIC TAMIL I	AEC	2	2	2	25	25	50
		22UATA301	ADVANCED TAMIL I					25	25	
		21UGEA303	GENERAL AWARENESS					-	50	

	IV	23UCB3SB1	SKILL BASED: BUSINESS COMMUNICATION **(*Skill Development)***	SEC	3	2	3	25	75	100
	1V	23UNCCWS1	WOMEN STUDIES	AEC			2	-	50	50
IV	**I**	23UTML404	TAMIL COURSE IV	LAN	4	3	3	25	75	100
		23UHDI404	HINDI COURSE IV							
		23UFRH404	FRENCH COURSE IV							
	II	23UGEL404 23UAEL404	GENERAL ENGLISH IV ADVANCED ENGLISH IV	ENG	4	3	3	25	75	100
	III	23UCB4C07/ 23UCO4C08/ 23UCC4C06/ 23UCE4C08	CORE: CORPORATE ACCOUNTING **(*Employability & Skill Development)***	CC	5	5	3	25	75	100
	III	23UCB4C08/ 23UCO6C16	CORE: FUNDAMENTALS OF FINANCIAL MANAGEMENT **(*Employability, Entrepreneurship & Skill Development)***	CC	5	5	3	25	75	100
	III	23UCB4CP2	CORE: PRACTICAL-II DATABASE PROGRAMMING ***Employability, Entrepreneurship & Skill Development)***	CC	3	3	3	30	45	75
	III	23UMA4A18	ALLIED: BUSINESS STATISTICS	GEN	5	4	3	20	55	75
	IV	23UBTA402	BASIC TAMIL II	AEC	2	2	2	25	25	50
		23UATA402	ADVANCED TAMIL II					25	25	
		21UHUR404	HUMAN RIGHTS					-	50	
	IV	23UCB4SB2	SKILL BASED: DATABASE PROGRAMMING **(*Skill Development)***	SEC	3	2	3	25	75	100

V	**III**	23UCB5C09 / 23UCO5C11 /	CORE: COST ACCOUNTING **(*Employability & Skill Development)***	CC	5	5	3	25	75	100
	III	23UCB5CP3	CORE: PRACTICAL-III R PROGRAMMING **(*Employability & Skill Development)***	CC	5	5	3	40	60	100
	III	23UCB5C10 / 23UCO5C13	CORE: INCOME TAX **(*Employability, Entrepreneurship & Skill Development)***	CC	5	5	3	25	75	100
	III	23UCB5E01	ELECTIVE: BIG DATA ANALYTICS **(*Entrepreneurship & Skill Development)***	DSE	5	4	3	25	75	100
		23UCB5E02	ELECTIVE: BUSINESS ORGANIZATION AND MODELS ***(Employability, Entrepreneurship***							
	III	23NCB5E01	NME: INTRODUCTION TO BUSINESS ANALYTICS	GE	4	4	3	25	75	100
	IV	23UCB5SB3	SKILL BASED: INTRODUCTION TO DIGITAL MARKETING **(*Employability & Skill Development)***	SEC	3	2	3	25	75	100
	IV	23IDSBCB 1	SKILL BASED: FUNDAMENTALS OF SQL	SEC	3	2	3	25	75	100
VI	**III**	23UCB6C11 / 23UCO6C14 /	CORE: MANAGEMENT ACCOUNTING **(*Employability & Skill Development)***	CC	6	5	3	25	75	100
	III	23UCB6C12	CORE: HADOOP **(*Employability, Entrepreneurship & Skill Development)***	CC	4	3	3	20	55	75

	III	23UCB6CP4	CORE: PRACTICAL-IV HADOOP **(*Entrepreneurship & Employability)***	CC	4	3	3	30	45	75
	III	23UCB6C13	CORE: BANKING AND AUDIT **(*Employability& Skill Development)***	CC	5	3	3	20	55	75
	IV	23UCB5SB3	SKILL BASED: INTRODUCTION TO DIGITAL MARKETING **(*Employability & Skill Development)***	SEC	3	2	3	25	75	100
	III	23UCB6E01	**ELECTIVE:** BUSINESS INTELLIGENCE (***Entrepreneurship & Skill Development)***	DSE	5	4	3	25	75	100
		23UCB6E02	**ELECTIVE**: BRAND MANAGEMENT							
	IV	23IDSBCB1	SKILL BASED: FUNDAMENTALS OF SQL	SEC	3	2	3	25	75	100
	V		EXTENSION AND CO-CURRICULAR ACTIVITIES (NSS, NCC, SPORTS, NECTAR/RSP/YRC/AICUF/ CHETNA WOMEN CELL /			1	-	-	-	50
	IV	19UCYS605	CYBER SECURITY	AEC		2	3	-	50	50
	IV		MOOC			2				
			TOTAL			140 +2 +2				**3800+50**

PART WISE TOTAL MARKS

PART	PAPERS	CREDIT POINTS	TOTAL MARKS
PART I	LANGUAGE –TAMIL/HINDI/FRENCH	12	400
PART II	ENGLISH-GENERAL/ADVANCED	12	400
PART III	CORE	67	1500
	ALLIED	16	300
	ELECTIVE	12	300
PART IV	BASIC TAMIL I AND II ADVANCED TAMIL I AND II INDIAN KNOWLEDGE SYSTEM HUMAN RIGHTS	4	100
	SKILL BASED (6 PAPERS)	12	600
	VALUE EDUCATION	2	50
	WOMEN STUDIES	-	50
	ENVIRONMENTAL STUDIES	2	50
	CO-CURRICULAR ACTIVITIES	1	50
	CYBER SECURITY	2	50
	MOOC COURSE	2	
GRAND TOTAL		**140+2+2**	**3800+50**

CERTIFICATE COURSES	CLASS	HOURS

SKILL DEVELOPMENT COURSE: DIGITAL FLUENCY	I UG	45
SKILL DEVELOPMENT COURSE: ARTIFICIAL INTELIGENCE (BUSINESS ANALYTICS)	II UG	45
PROGRAMMING LANGUAGE	I B. Com BA	40
POWER BI	III B. Com BA	40

SELF STUDY COURSES	**OFFERED BY**
PHYSICAL & MENTAL HEALTH	COLLEGE
CURRENT AFFAIRS	COLLEGE

NATURE OF COURSES	**ABBREVIATIONS**
LANGUAGE	LAN
ENGLISH	ENG
CORE COURSE	CC
GENERIC (ALLIED)	GEN
ABILITY ENHANCEMENT COURSE	AEC
SKILL ENHANCEMENT COURSE	SEC
GENERIC ELECTIVE (NME)	GE
DISCIPLINE SPECIFIC ELECTIVE	DSE

MEMNERS OF THE BOARD OF STUDIES

SEMESTER: I

COURSE CODE: 23UCB1C02

TITLE OF THE COURSE: CORE - FUNDAMENTALS OF BUSINESS ANALYTICS

(Entrepreneurship)

OBJECTIVES

				
Dr.M.NIRMALA Assistant Professor, Department of Commerce, Bharathiar University, Coimbatore	**Dr.T.M.HEMA LATHA** Dean School of Commerce Rathinam College of Arts and Science Coimbatore	**Dr.G.VENGATESAN** Associate Professor and Head Dept of B.Com(Business Analytics) KPR College of Arts Science and Research Coimbatore	**Dr. S. GOWRI** Associate Professor and Head Dept of B.Com(Business Analytics) PSG College of Arts & Science , Coimbatore	**Mr.B.SIVA KUMAR** CEO, Crewmates HR Consultancy Firm & LEN DAN Event Management, Coimbatore.

- To impart knowledge on various levels of Business Analysis and issues concerning them.
- To educate the functions of Business Analytics.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Understand the different levels of business analysis	**K2**
CO 2	Gain knowledge on information technology applications	**K1**
CO 3	Understand the role of business intelligence	**K2**
CO 4	Understand data integration and dimensional model	**K3**
CO 5	Gain knowledge on performance Management	**K3**

Syllabus

Credit Points - 4 **Instructional Hours: 75 hours**

UNIT:1 Introduction to the Business Analytics (K2) (15 hours)

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

UNIT – II : Information Technology Applications (K1) (15 hours)

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.

(Self - Study: Key purpose of using IT in business)

UNIT – III: OLTP and OLAP (K2) (15 hours)

Introduction to OLTP and OLAP – OLTP – OLAP – Different OLAP Architectures – OLTPand 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.

(Self - Study: Need for BI)

UNIT - IV: DATA INTEGRATION (K3) (15 hours)

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.

UNIT – V: KPIs and Performance Management (K3) (15 hours)

Measures, Metrics, KPIs and Performance Management – Definition -Measurement system terminology – Role of Metrics and metrics supply chain – fact-based decision making and KPIS use of KPIs – potential source for metrics. Enterprise Reporting –Report standardization – Balanced score card – dashboards – scoreboards vs. dashboards. BI inReal world – BI and mobility – BI and cloud computing – BI for ERP systems –Social CRMand BI.

Note: 100% Theory.

Text Book(s)

1 RN Prasad, Seema Acharaya - Fundamentals of Business Analytics – Wiley – Revised Edition 2015.
2 Pang-Ning Tan, Michael Steinbach, Vipin Kumar – Introduction to Data Mining – Pearson Education - Revised Edition 2015.

Reference Books

1 Haydn Thomas – Demonoid – Business Analysis Fundamentals – Pearson Education – 2015 Revised Edition.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
Unit IV	Data Modeling	**XENONSTACK**	https://www.xenonstack.com/insights/data-modelling
Unit V	BI for ERP systems	**In4Velocity**	https://www.in4velocity.com/blog/role-of-business-intelligence.html

MAPPING OF CO'S WITH POs/PSOs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	3	2	3	3	3	2	1	3	3	3	3	3
CO 2	3	2	2	2	3	3	2	2	3	3	3	3	3
CO 3	3	2	3	3	2	3	3	2	2	2	3	3	3
CO4	3	3	3	3	2	3	3	1	2	2	3	3	3
CO5	3	2	3	3	2	3	3	1	2	2	3	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component **(**Quiz)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C.Goldbell Rachel	**Name: Dr.C.Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name:	**(Principal)**

SEMESTER: I

COURSE CODE: 24UCB1AP1

TITLE OF THE COURSE : ALLIED: PRACTICAL I: ADVANCED EXCEL

(Employability)

COURSE OBJECTIVES :

- To familiarize with spreadsheets and understand the chart concepts.
- To learn the usage of functions and simple financial, mathematical and statistical formula.

COURSE OUTCOMES :

At the completion of the course the student will have the ability to

CO1	Able to create spreadsheet by following current professional standard.	**K2**
CO2	Use skills to design and create spreadsheet.	**K3**
CO3	To learn the usage of functions and simple financial, mathematical and statistical formula.	**K3**

				
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SYLLABUS

Total Credits - 4 **Instructional hours: 75**

Exercise 1: Find Mean, Median and Mode using Excel.

Exercise 2: Analyze sample purchase detail using built-in functions in Excel.

Exercise 3: Analyze sample sales information system using pivot table and pivot chart.

Exercise 4: Create profit and loss details for any three companies and display the result using various charts in Excel.

Exercise 5: Implement the concept of macros using Excel.

Exercise 6: What if analysis using solver model

Exercise 7: Do Feature Analysis and Data Analysis for any two companies.

Exercise 8: Implement conditional formatting to sort data by column, slice, and table wise.

Exercise 9: Enter Stock details and prepare various reports using Excel.

Exercise 10: Manage connections by using the Workbook Connection dialog box in Excel.

Note: Distribution of Mark 100% Practical.

MAPPING OF CO'S WITH PO'S/PEO'S

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	3	3	3	2	1	2	2	2	1	1	2	2
CO 2	3	3	2	3	3	1	1	2	1	2	2	2	2
CO 3	2	2	2	2	2	2	1	2	1	1	1	1	3

(Correlation: 3-High, 2-Medium, 1-Low)

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examination	Once in a semester
2.	Test	Twice in a semester
3.	Record	Every Exercise

Course designed by:	**Verified by HOD:**
Name: Dr.C. Goldbell Rachel	**Name: Dr.C. Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name: Dr.S.Jaculin Arockia Selvi	**(Principal)**

SEMESTER: II

COURSE CODE: 24UCB2C04

TITLE OF THE COURSE: CORE – DATABASE PROGRAMMING

(*Employability & Skill Development)*

OBJECTIVES

- To provide comprehensive knowledge about relational database.
- To understand the NoSQL database management system

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Interpret relational database management concepts	**K1**
CO 2	Develop the tables using normalization	**K2**
CO 3	Gain knowledge on SQL operators and keys	**K3**
CO 4	Understand the overview and history of SQL database	**K3**
CO 5	Acquire knowledge on the concepts of MongoDB	**K3**

Syllabus

Credit Points – 2 **Total hours: 45 Hours**

UNIT - I: Introduction to Database Management System (K1) **9 Hours**

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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.

(Self – Study: Relational database Management System)

UNIT-II: Normalization Process (K2) **9 Hour**

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 andcheck constraints-adding and modifying columns-Removing constraints from a table.

UNIT –III: Introduction To Group Functions (K3) 9 Hours

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 datesand time. Sub queries-Correlated queries-Using sub queries 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 procedure.

UNIT – IV: Overview and History Of NOSQ (K3) 9 Hours

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, TheEmergence of NoSQL. Aggregate Data Models: Aggregates - Key-Value and Document Data Models - Column- Family Stores - Summarizing Aggregate-Oriented Databases - More Detailson Data Models - Distribution Models - Consistency.

UNIT – V: Introduction to MONGODB (K3) 9 Hours

Introduction to MongoDB- Getting Started – Querying - Creating, Updating, and DeletingDocuments – Querying - Designing Your Application: Indexing - Special Index and CollectionTypes – Aggregation.

(Self – Study: Creating, Updating, and Deleting Documents)

NOTE:100% THEORY

TEXT BOOK

Pramod J. Sadalage & Martin Fowler - NoSql Distilled, Pearson Education Inc.,2013Edition.

REFERENCE BOOKS:

1. Ramon A Mata-Toledo Pauline K Cushman – Database Management System, TataMcGrew-Hill Publishing Company Limited, New Delhi, 2010, 2nd Edition.
2. Kristina Chodorow – MongoDB: The Definitive Guide, O'Reilly Media Inc., 2013 2ndEdition.
3. Ramakrishnan & Gehrke – Database Management Systems, Tata Mc Graw Hill, 2009, 8thedition.
4. Nilesh Shah – Database System using Oracle, PHI learning Pvt. Ltd., 2014, 2ndedition.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
I	Data models	geeksforgeeks	**https://www.geeksforgeeks.org/data-models-in-dbms/**
II	Normalizing the model	DATANAMIC	https://www.datanamic.com/support/database-normalization.html

MAPPING OF CO'S WITH POs/PSOs

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CO 1	3	1	1	1	2	1	3	2	3	2	1	3	3
CO 2	3	1	1	1	2	1	3	2	3	2	1	3	3
CO 3	3	1	1	1	2	2	3	2	3	2	1	3	3
CO4	2	1	1	1	2	2	3	2	3	2	1	3	3
CO5	2	1	1	1	2	2	3	2	3	2	1	3	3

Correlation: 3-High, 2-Medium, 1-LowASSESSMENT TOOLS

ASSESSMENT TOOLS

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S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Letter writing)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.S.Leema Rosaline	**Name: Dr.A.Elizabeth**
Checked by CDC:	**Approved by :**
Name:Dr.S.Jaculin Arockia Selvi	**(Principal)**

SEMESTER: II

COURSE CODE: 24UCB2AP2

TITLE OF THE COURSE : ALLIED PRACTICAL II: DATABASE PROGRAMMING

(Employability)

COURSE OBJECTIVES :

- To provide comprehensive knowledge about relational database concepts
- To explore NoSQL database management system

COURSE OUTCOMES :

At the completion of the course the student will have the ability to

CO 1	Interpret relational database management concepts	**K2**
CO 2	Develop the tables using normalization	**K3**
CO3	Illustrate SQL operators and keys	**K3**

SYLLABUS

Total Credits - 3 **Instructional hours: 45**

1. Normalize the following dataset:

a) Employee database

b) Students database

c) Hospital database

2. Data Definition Language and Data Manipulation Language Table:

Student Regno number (5) primary key Studname varchar2 (15)

Gender char (6)

Deptname char (15)

Address char (25)

Percentage number (4, 2)
Queries:
a) To create a table, describe a table, alter a table, drop a table, and truncate a table
b) 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
a) Insert values and display the records
b) Display sum, maximum amount of basic pay
c) List the name of the clerks working in the department 20
d) Display name that begins with „G"
e) List the names having „I" as the second character
f) List the names of employees whose designation are „Analyst" and „Salesman"
g) 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)
Mar 3 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 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 their net pay.
c) Display the details of the employees whose department is "Sales".
d) Select the details of employees whose HRA>= 1000 and 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 "Sultan chand".
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)
a) Perform INNER JOIN, that selects records that have matching values in both tables
b) Perform LEFT JOIN, that selects records that have matching values in both tables
c) Perform RIGHT JOIN, that selects records that have matching values in both tables.

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

Table: Customer
cusidnumber(10)
FirstName varchar2 (10)
LastName varchar2 (10)
City varchar2 (10)

Country varchar2 (10)
Phone number (10) Table: Supplier
Supid number (10)
CompanyName varchar2 (10)
ContactName varchar2 (10)
City varchar2 (10)
Country varchar2 (10)
Phone number (10)
Fax number (10)

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

MONGODB:

9. Create a Student Database in MongoDB using "use" Command.

10. Create program using crud operation using MongoDB.

11. Create program text search and indexes using MongoDB.

12. Create the replica set in the mongo shell and test the configuration

WEKA:

13.Demonstration of preprocessing on dataset student.arff

14. Demonstration of classification rule process on dataset employee.arff using id3 algorithm

15. Demonstration of clustering rule process on dataset student.arff using simple k-means

Note: Distribution of Mark 100% Practical.

MAPPING OF CO'S WITH PO'S/PEO'S

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	3	3	3	2	1	2	2	2	1	1	2	2
CO 2	3	3	2	3	3	1	1	2	1	2	2	2	2
CO 3	2	2	2	2	2	2	1	2	1	1	1	1	3

(Correlation: 3-High, 2-Medium, 1-Low)

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment

				
Dr.M.NIRMALA Assistant Professor, Department of Commerce, Bharathiar University, Coimbatore	**Dr.T.M.HEMA LATHA** Dean School of Commerce Rathinam College of Arts and Science Coimbatore	**Dr.G.VENGATESAN** Associate Professor and Head Dept of B.Com(Business Analytics) KPR College of Arts Science and Research Coimbatore	**Dr. S. GOWRI** Associate Professor and Head Dept of B.Com(Business Analytics) PSG College of Arts & Science , Coimbatore	**Mr.B.SIVA KUMAR** CEO, Crewmates HR Consultancy Firm & LEN DAN Event Management, Coimbatore.

1.	End semester Examination	Once in a semester
2.	Test	Twice in a semester
3.	Record	Every Exercise

Course designed by:	**Verified by HOD:**
Name: Dr.C. Goldbell Rachel	**Name: Dr.C. Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name: Dr.S.Jaculin Arockia Selvi	**(Principal)**

SEMESTER: III

COURSE CODE: 22UCB3C06

TITLE OF THE COURSE: CORE - BUSINESS DATA MINING
(*Employability & Skill Development)*

OBJECTIVES

- To understand data mining techniques and algorithm in business analytics.
- To apply data preprocessing techniques and tools to solve business problems.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Define the concepts of data warehousing, data mining and data preprocessing	**K1**
CO 2	Outline the concepts of association rule mining	**K2**
CO 3	Define the concepts of classification of predication of data using c++	**K3**
CO 4	Explain the methods of clustering using C++	**K3**
CO 5	Analyze the data mining tool	**K3**

Syllabus

Credit Points- 3 **Instructional Hours: 60 hours**

Unit I : Data Warehousing (K1) **12 Hours**

Data Warehousing - Operational Database Systems vs. Data Warehouses - Multidimensional Data Model - Schemas for Multidimensional Databases – OLAP Operations – Data Warehouse Architecture– Indexing – OLAP queries & Tools. Datamining & Data Preprocessing-Introduction to KDD process – Knowledge Discovery from Databases - Need for Data Preprocessing – Data Cleaning – Data Integration and Transformation – Data Reduction – Data Discretization and Concept Hierarchy Generation.

Self - Study : OLAP queries & Tools. Datamining & Data Preprocessing

Unit II : Association Rule Mining(K2) **12 Hours**

Introduction - Data Mining Functionalities - Association Rule Mining - Mining Frequent Item sets with and without Candidate Generation - Mining Various Kinds of Association Rules - Constraint-Based Association Mining.Data Mining: Data mining tasks-Data mining vs KDD- Issues in data mining, Data Mining metrics, Data mining architecture - Data cleaning- Data transformation- Data reduction - Data mining primitives.

Beyond Curriculum: Mining multi- dimensional association rules.

Unit III : Classification & Prediction(K3) **12 Hours**

Classification vs. Prediction – Data preparation for Classification and Prediction – Classification by Decision Tree Introduction – Bayesian Classification – Rule Based Classification – Classification by Back Propagation – Support Vector Machines – Associative Classification – Lazy Learners – Other Classification

Methods – Prediction – Accuracy and Error Measures – Evaluating the Accuracy of a Classifier or Predictor – Ensemble Methods – Model Section.

Self - Study : Other Classification Methods

Unit IV : Clustering (K3) **12 Hours**

Cluster Analysis: - Types of Data in Cluster Analysis – A Categorization of Major Clustering Methods – Partitioning Methods – Hierarchical methods – Density-Based Methods – Grid- Based Methods – Model-Based Clustering Methods – Clustering High- Dimensional Data – Constraint- Based Cluster Analysis – Outlier Analysis.

Unit V : Data Mining Tool (K3) **12 Hours**

Introduction to WEKA – Loading the data (Simple) - Filtering attributes (Simple) - Selecting attributes (Intermediate) – Training a classifier (Simple) - Building your own classifier (Advanced) - Tree visualization (Intermediate) - Testing and evaluating your models (Simple)Regression models (Simple) - Association rules (Intermediate) - Clustering (Simple) - Reusing models (Intermediate) - Data mining in direct marketing (Simple) - Using Weka for stock value forecasting (Advanced).

Note: 100% Theory.

Text Book(s)

1. Jiawei Han and MichelineKamber – Data Mining Concepts and Techniques – Morgan Kaufman – 2011 3rd Edition.
2. M. H. Dunham – Data Mining Introductory and Advanced Topics, Imprint Pearson Education, 2011 4th Impression.

Reference Books

1. Ian H. Witten and Eibe Frank – Data Mining Practical Machine Learning Tools and Techniques, Morgan Kaufmann Publication – 2016 4th Edition.
2. Arun K. Pujari – Data Mining Techniques, Universities Press (India) Pvt. Ltd., 2013 Kindle Edition.

UNIT	TOPIC	SOURCE	LINKS
Unit IV	Data Modeling	**XENONSTACK**	**https://www.xenonstack.com/insights/data-modelling**

Unit V	BI for ERP systems	**In4Velocity**	**https://www.in4velocity.com/blog/role-of-business-intelligence.html**

BLENDED LEARNING

MAPPING OF CO'S WITH POs/PSOs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	1	1	1	3	3	1	1	1	2	2	2	3
CO 2	3	1	1	1	2	2	3	1	2	2	3	2	3
CO 3	3	1	2	2	1	1	3	2	2	3	1	3	3
CO4	3	1	2	2	3	2	3	2	2	3	2	2	3
CO5	3	1	1	1	3	2	3	2	3	3	2	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No.	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Open Book Test)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C. Goldbell Rachel	**Name: Dr.C. Goldbell Rachel**
Checked by CDC:	**Approved by :**

				
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Name: Dr.S.Jaculin Arockia Selvi	**(Principal)**

SEMESTER: III

INTRODUCTION TO DIGITAL MARKETING

(Industry 4.0)

(Entrepreneurship & Skill Development)

OBJECTIVES

- To learn the basics of Marketing.
- To provide knowledge about the digital marketing management, digital marketing presence and interactive marketing.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Understand the basics of marketing	**K1**
CO 2	Be familiar with introduction of Digital marketing	**K1**
CO 3	Know the effectiveness of Digital marketing management	**K2**
CO 4	Get knowledge on Digital marketing presence	**K2**
CO 5	Be familiar with interactive marketing	**K2**

Syllabus

Credit Points - 3 **Instructional Hours: 60 hours**

UNIT- I: Introduction of marketing (K1) 12 hours

Introduction of marketing: – Definition of marketing - - Products and service marketing Functions of marketing. Marketing Mix – Concept of 7 Ps of Marketing - Product mix: life cycle, Concepts of product – Price mix: Objectives, Methods and kinds, Practical concepts –Place mix: Channels of Distribution – Promotion Mix: Personal selling

(Self – Study: Price Mix)

UNIT – II: **Introduction of Digital Marketing (K1)**

Introduction: Concept, scope, and importance of digital marketing, Traditional marketing versus digital marketing. Challenges and opportunities for digital marketing. Digital marketing in Indian Scenario

(Self-Study: Traditional marketing versus digital marketing)

UNIT – III: **Digital Marketing Mix (K2) 12 Hours**

Digital marketing mix: Segmentation, Targeting, Differentiation, and Positioning. Digital Technology and Customer Relationship Management. Digital Consumers and their buying decision process.

UNIT – IV: Digital Marketing Presence (K2)

Concept and role of Internet in Marketing. Online marketing domains. Website design and Domain name branding. Search engine optimization: Stages, types of traffic, tactics. E-mail marketing: types and strategies.

Beyond Curriculum: Online Public Relation Management.

UNIT - V: Interactive Marketing (K2) 12 hours

Interactive marketing: Concept and options. Social media marketing: Concept and tool Online communities and social networks. Blogging: Types and role. Video marketing: tools and techniques. Mobile marketing tools. PPC Marketing. Payment options.

Note: 100% Theory.

TEXT BOOK:

1.Pillai R.S.N &Bhagavathi, (2010) 4th edition Modern Marketing, S Chand & Co, New Delhi.

2. Kotler, Philip, Hermawan Kartajaya, and Iwan Setiawan (2017). Digital Marketing: 4.0

Moving from Traditional to Digital. Pearson India, Delhi

REFERENCE BOOKS:

1.Vandana Ahuja, (2015) Digital Marketing Oxford University Press, UK.

2.Puneet Singh Bhatia, Fundamentals of Digital Marketing, Pearson, Delhi

3.Frost, Raymond D., Alexa Fox, and Judy Strauss (2018). E- Marketing. Routledge, UK

4.Gupta, Seema (2018). Digital Marketing. McGraw Hill Education (India) Private Ltd, Uttar Pradesh.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
II	Digital Marketing	**YOUTUBE**	*https://youtu.be/b62x9f-os-o*
V	Digital Payment	**YOUTUBE**	https://youtu.be/kP9fcw0Xq0E

MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	**3**	**1**	**1**	**2**	**3**	**3**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**1**
CO2	**3**	**1**	**1**	**2**	**2**	**2**	**1**	**1**	**2**	**2**	**3**	**2**	**3**	**1**
CO3	**3**	**1**	**2**	**2**	**1**	**1**	**1**	**2**	**2**	**3**	**1**	**3**	**3**	**1**
CO4	**3**	**1**	**2**	**2**	**3**	**2**	**3**	**2**	**2**	**3**	**2**	**2**	**3**	**1**
CO5	**3**	**1**	**1**	**1**	**3**	**2**	**3**	**2**	**3**	**3**	**2**	**3**	**3**	**2**

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No.	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Quiz)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr. C. Goldbell Rachel	**Name: Dr. C. Goldbell Rachel**
Checked by CDC:	**Approved by:**
Name: Dr.S. Jaculin Arockia Selvi	

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SEMESTER: III

COURSE CODE: 22UCB3SB1

TITLE OF THE COURSE: SKILL BASED – BUSINESS COMMUNICATION

(Skill Development)

OBJECTIVES

- To create an awareness on the types and importance of communication.
- To enable them to develop their writing skills through various forms of business letters.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Identify the do's and don'ts of communication	**K1**
CO 2	Familiarize with the different types of communication	**K2**
CO 3	Acquaint with layout of a business letter	**K3**
CO 4	Draft enquiry, order and sales letters	**K3**
CO 5	Draft compliant, adjustment, collection and circular letters	**K3**

Syllabus

Credit Points - 2 **Total hours: 45 hours**

UNIT – I: Fundamentals of Communication (K1) **9 hours**

Principles of Communication: Definition – Process - Objectives – Communication Network – 7C's and 4S's in Communication.

(Self – Study: Process of Communication)

UNIT-II: Types and Barriers of Communication (K2) 9 hours

Types of Communication: Oral, Written and Gesture – Barriers to Communication.

UNIT –III: Layout and Functions of Business Letter (K3 9 hours

Need and Functions of Business Letter – Effective Business Letter –Layout of Business Letter.

UNIT – IV: Basic Business Letters (K3) 9 hours

Types of Business Letters: Inquiries - Orders - Credit Letters – Sales Letters.

UNIT – V: Business Letters (K3) 9 hours

Claim or Complaint Letters – Adjustment Letters– Collection Letters – Circular Letters.

(Self – Study: Circular Letters)

Note: 100% Theory.

TEXT BOOK:

Rajendra Pal and Korlahalli J.S, (2012)13th edition Essentials of Business Communication, Sultan Chand &Company Ltd, New Delhi

REFERENCE BOOKS:

1. Gupta C.B,(2016) 10th edition Business communication, Sultan Chand & Sons, New Delhi.

2. Pillai R S N and Mrs.Bagavathi,(2013) 10th edition Commercial Correspondence & Office Management, Sultan Chand & Company, New Delhi.

3.Sunder K & Kumara Raj A, (2017) Business communication, Vijay Nicole Imprints Pvt. Ltd, Chennai

4.Raman B.S,(2012) 2nd edition Business communication, United Publishers, Karnataka.

5. Nishitesh and Dr.Bhaskara Reddi,(2012) Soft Skills and Life Skills: The Dynamics of Success, BSC Publishers and Distributors, Hyderabad.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
I	Principles of Communication	e-PG Pathshala	***https://youtu.be/r3chnW3jD3c***
	Effective Communication	e-PG Pathshala	***https://youtu.be/fFemIRdVhHQ***
II	Types of Communication	e-PG Pathshala	https://youtu.be/CCwS-21ruNA

MAPPING OF CO'S WITH POs/PSOs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	1	1	1	2	1	3	2	3	2	1	3	3
CO 2	3	1	1	1	2	1	3	2	3	2	1	3	3
CO 3	3	1	1	1	2	2	3	2	3	2	1	3	3
CO4	2	1	1	1	2	2	3	2	3	2	1	3	3
CO5	2	1	1	1	2	2	3	2	3	2	1	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester

6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Letter writing)	Once in a semester

Course designed by:	**Verified by HOD:**
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Checked by CDC:	**Approved by:**
Name: Dr.S. Jaculin Arockia Selvi	**(Principal)**

				
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SEMESTER: IV

COURSE CODE: 24UCB4CP1

TITLE OF THE COURSE: CORE : PRACTICAL I - R PROGRAMMMING

(Employability & Skill Development)

COURSE OBJECTIVES :

- Develop understanding on R concepts using vectors and matrix.
- Familiarize with R functions to read files from other sources by using different datasets and drawing charts.
- Enhance the knowledge of R concepts applied in ANOVA and PCA.

COURSE OUTCOMES :

At the completion of the course the student will have the ability to

CO 1	Apply statistical functions (mean, standard deviation, sampling).	**K2**
CO 2	Understand merging Datasets and subset of datasets for applying in real timeexample.	**K3**
C03	Implement R with Control statements and looping.	**K3**

SYLLABUS

Total Credits - 4 **Instructional hours: 75 Hours**

1 Read a CSV & excel file and perform Subsets of dataset, Merging datasets

2 Create an R program:

a) To add two vectors.

b) To find sum, mean and product of vector.

c) To generate random number from standard distributions

d) To sample from a population.

3 Consider an experiment with Cars. Three different brands and four different models have been tested, and there are three replications for each of the 12 combinations. The production has been registered for each of the 36 units. The data are saved in the file cars.xlsx. Make a histogram of the production details. Moreover, compute the mean, median and standard deviation of the production variable.

4 Take the data from two different sources (files), and merge before analysis. And analyse the data set using charts.

5 Apply table () function to summarize the dataset, “Rental Units”.

6 Draw a cumulative frequency graph using R with relevant data

7 Create R program to verify the age of Voting using Conditional Statement.

8 Analyse the Banking Crisis using two way ANOVA method.

9 As part of a large project on characterization of ecological zones, 11 environmental variables were measures at 30 sites along the Doubs River. The variables were distance from the source, i.e. from the start location (das), altitude (alt), slope (pen), mean minimum discharge (deb), pH of water (pH), concentration of calcium, phosphate, nitrate, ammonium, respectively (dur,pho, nit, amm), dissolved oxygene (oxy), biological oxygen demand (dbo). Perform PCA and make a plot for first two principal components.

10 Perform the following: Matrix computations, Transpose, Inverse matrix, Determinant

Note: Distribution of Mark 100% Practical.

MAPPING OF CO’S WITH PO’S/PEO’S

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	3	3	3	3	2	1	2	2	2	1	1	2	2	3
CO 2	3	3	2	3	3	1	1	2	1	2	2	2	2	2
CO 3	2	2	2	2	2	2	1	2	1	1	1	1	3	3

(Correlation: 3-High, 2-Medium, 1-Low)

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examination	Once in a semester
2.	Test	Twice in a semester
3.	Record	Every Exercise

Course designed by:	Verified by HOD:
Name: Dr.C. Goldbell Rachel	Name: Dr.C. Goldbell Rachel
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Name: Dr.S.Jaculin Arockia Selvi	(Principal)

				
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SEMESTER: IV
COURSE CODE: 24UCB4SB2

TITLE OF THE COURSE: SKILLED BASED – STATISTICS USING R TOOLS

(*Employability & Skill Development)*

OBJECTIVES

- To impart knowledge on function documentation and data types.
- To understand the basic statistics and linear models.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Understand the various data types and function documentation.	**K1**
CO 2	Gain knowledge on control statements and data structure	**K3**
CO 3	Acquire knowledge on reading and writing data	**K3**
CO 4	Have knowledge on basic statistics	**K2**
CO 5	Be familiar with linear models	**K3**

Syllabus

Credit Points - 5 **Instructional Hours: 90 hours**

Unit I: Introduction to R (K1) ***18 Hours***

Basic of R – Basic Math – Variables – Data Types – Vector Operations -Calling Function – Function Documentation - Missing Data – Pipes.

Unit II: Control Statements and Data Structure (K3) ***18 Hours***

Control Statements : IF and ELSE – IF ELSE - Switch – FOR -While Loop - Data Frames – Lists – Matrices – Arrays.

(Self Study : IF ELSE)

Unit III: Reading and Writing Data ***18 Hours***

Reading CSVs – Reading from Database – R Binary Files – Data Included with R – Writing R functions – Function Arguments – Return Values.

Unit IV : Basic Statistics ***18 Hours***

Summary Statistics – Correlation and Co-variance – T-Test – One – Sample T-Test – Two Sample T-Test – Paired TwoSample T-Test - ANOVA.

(Self Study :Paired Two Sample T-Test)

Unit V: Linear Models ***18 Hours***

Simple Linear Regression – ANONA Alternative - Multiple Regression – Logistics Regression.

(Advances Topic :Poisson Regression)

TEXT BOOK:

1. Jared P.Lander. (2017) R for Everyone. (2nd Edition) Pearson Education.

REFERENCE BOOK

1. Norman Matloff. (2011) The Art of R Programming. Library of Congress Cataloging-in-Publication Data.
2. G.M Siddesh and Sowmya B.J. (2017) Statistical Programming in R. Oxford University Press.
3. Hadley Wickham and GarretteGrolemund. (2017) R for Data Science. Published O·Reilly Media.

1. BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
II	Control Statements	**geeksforgeek**	https://www.geeksforgeeks.org/control-statements-in-r-programming
IV	ANOVA	**geeksforgeek**	https://www.geeksforgeeks.org/anova-test-in-r-programming\

MAPPING OF CO'S WITH POs/PSOs

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CO 3	3	1	1	3	1	3	2	1	3	2	1	3	3
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CO5	3	1	1	3	1	3	2	1	3	2	1	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
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4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Quiz)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C. Goldbell	**Name: Dr.C. Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name: Dr.S.Jaculin Arockia Selvi	**(Principal)**

				
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SEMESTER: V

COURSE CODE: 24UCB5CP2

TITLE OF THE COURSE : CORE: PRACTICAL II- PYTHON PROGRAMMING

(Employability)

COURSE OBJECTIVES :

- To Understand various statistical calculations
- To explore and acquire skills in Python Programming

COURSE OUTCOMES :

At the completion of the course the student will have the ability to

CO 1	Understand and relate statistical calculations	**K2**
CO 2	Apply and describe pandas	**K3**
CO3	Practically apply plotting graphs	**K3**

SYLLABUS

Total Credits - 3 **Instructional hours: 45**

1. Word frequency analysis

Exercise 1.1. Write a program that reads a file, breaks each line into words, strips whitespace and punctuation from the words, and converts them to lowercase.

Exercise 1.2. Go to Project Gutenberg (http: // gutenberg. org) and download your favorite out-of-copyright book in plain text format. Modify your program from the previous exercise to read the book you downloaded, skip over the header information at the beginning of the file, and process the rest of the words as before.

Then modify the program to count the total number of words in the book, and the number of times each word is used. Print the number of different words used in the book. Compare different books by different authors, written in different eras. Which author uses the most extensive vocabulary?

Exercise 1.3. Modify the program from the previous exercise to print the 20 most frequently- used words in the book.

Exercise 1.4. Modify the previous program to read a word list (see Section 9.1) and then print all the words in the book that are not in the word list. How many of them are typos? How many of them are common words that should be in the word list, and how many of them are really obscure?

2. **Random numbers**

Exercise 2.1. Write a function named choose_from_hist that takes a histogram as defined in and returns a random value from the histogram, chosen with probability in proportion to frequency.

3. **Word histogram**

Exercise 3.1 .Reads a file and builds a histogram of the words in the file Exercise 3.2.reads emma.txt, which contains the text of Emma by Jane Austen.

Exercise 3.3 Updates the histogram by creating a new item or incrementing an existing one. Exercise 3.4. Count the total number of words in the file by add up the frequencies in the histogram.

4. **Most common words**

Exercise 4.1. Find the most common words by applying the DSU pattern; most common takes a histogram and returns a list of word-frequency tuples, sorted in reverse order by frequency.

Exercise 4.2. Print the ten most common words.

5. **Optional parameters**

Exercise 5.1. Prints the most common words in a histogram.

6. **Dictionary subtraction**

Exercise 6.1. Python provides a data structure called set that provides many common set operations.

Exercise 6.2. Write a program that uses set subtraction to find words in the book that are not in the word list.

7. **Random words**

Exercise 7.2: Use keys to get a list of the words in the book, Build a list that contains the cumulative sum of the word frequencies. The last item in this list is the total number of words in the book, n, Choose a random number from 1 to n. Use a bisection search to find the index where the random number would be inserted in the cumulative sum, Use the index to find the corresponding word in the word list.

Exercise 7.2. Write a program that uses this algorithm to choose a random word from the book.

8. **Markov analysis**

- Read a text from a file and perform Markov analysis
- Add a function to the previous program to generate random text based on the Markov analysis.
- Finally mashup:

9. **Docstrings for polygon, arc and circle.**

Draw a stack diagram that shows the state of the program while executing circle(bob,radius).

Note: Distribution of Mark 100% Practical.

MAPPING OF CO'S WITH PO'S/PEO'S

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	3	3	3	2	1	2	2	2	1	1	2	2
CO 2	3	3	2	3	3	1	1	2	1	2	2	2	2
CO 3	2	2	2	2	2	2	1	2	1	1	1	1	3

(Correlation: 3-High, 2-Medium, 1-Low)

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examination	Once in a semester
2.	Test	Twice in a semester
3.	Record	Every Exercise

Course designed by:	Verified by HOD:
Name: Dr.C. Goldbell Rachel	Name: Dr.C. Goldbell Rachel
Checked by CDC:	Approved by :
Name: Dr.S.Jaculin Arockia Selvi	(Principal)

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SEMESTER V

COURSE CODE: 23UCB5E01

TITLE OF THE COURSE: ELECTIVE - BIG DATA ANALYTICS

(*Entrepreneurship & Skill Development)*

Industry 4.0

OBJECTIVES

- To develop an understanding on Big Data and Analytics using various Applications.
- To familiarize with data collection, sampling and preprocessing.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Learn Analytical process model and its requirements	**K1**
CO 2	Implement detection, Standardization Data Categorization.	**K2**
CO 3	Understand industry examples of Big data in Line World, Database Marketers and Pioneers of Big Data	**K3**
CO 4	Implement market basket analysis and finding frequent item dataset.	**K3**
CO 5	Apply Crowd Sourcing Analytics and Firewall Analytics.	**K3**

Syllabus

Credit Points - 4 **Instructional Hours: 75 hours**

Unit I: Big Data and Analytics (K1) (15 hours)

Big Data and Analytics – Applications – Basic Nomenclature-Analytics Process Model – Job Profiles Involved – Analytics – Analytical Model Requirements.

Unit II: Data Collection, Sampling and Preprocessing (K2) (15 hours)

Data Collection, Sampling and Preprocessing – Types of Data Sources –Sampling Types of Data Elements – Visual Data Exploration and Exploratory Statistical Analysis Missing Values – Outlier Detection and Treatment – Standardization Data Categorization – Weights of Evidence Coding – Variable Selection – Segmentation

Unit III: Industry and Big Data (K3) (15 hours)

Industry Examples of Big Data – Digital Marketing and the Non – Line World – Database Marketers, Pioneers of Big Data – Big Data and the New School of Marketing Fraud and Big Data – Risk and Big Data – Credit Risk Management – Big Data and Algorithmic Trading – Advertising and Big Data – Using Consumer Products as a Doorway.

Unit IV: Big Data Technology (K3) (15 hours)

Big Data Technology – The Elephant in the Room: Hadoop's Parallel World Old Vs New Approaches – Data Discovery: Work the Way People's Minds Work – Open Source Technology for Big Data Analytics – The Cloud and Big Data – Software as a Service BI – Mobile Business Intelligence is Going Mainstream – Crowd Sourcing Analytics – Inter and Trans Firewall Analytics.

Unit V: Big Data Applications (K3) (15 hours)

Applications – Credit Risk Modeling – Fraud Detection – Net Lift Response Modeling Churn Prediction – Recommender Systems – Web Analytics – Social Media Analytics Business Process Analytics.

Note: 100% Theory.

Text book

1. Wiley Baesens ,"Analytics Big data World - The Essential Guide to Data Science and its Applications", Wiley, 2014.
2. Minelli Chambers Dhiraj,"Big Data Big Analytics - Emerging Business Intelligence and Analytics Trends for Today's Businesses", Wiley, 2013.

Reference Books

1. James R Evans, "Business Analytics- Methods, Models and Decisions", Pearson education India Chennai.2013.
2. R.N Prasad, Seema Acharya, "Fundamentals of Business Analytics", Wiley, 2015.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
IV	Big Data Technology	**YouTube**	https://youtu.be/Pyo4RWtxsQM?si=mwUYcfVuFjbwhTvv
V	Big Data Applications	**YouTube**	https://youtu.be/nogE5tOt3g8?si=VGfL-4XzIGqrNHIU

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3	1	3	3	1	1	1	3	1	3	3	3	3	3
CO2	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO3	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO4	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO5	3	2	3	3	3	1	1	3	3	3	3	3	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component	Once in a semester

Course designed by:	Verified by HOD:
Name: Dr.C.Goldbell Rachel	Name: Dr.C.Goldbell Rachel
Checked by CDC:	Approved by :
Name:Dr.S.Jaculin Arockia Selvi	(Principal)

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SEMESTER V

COURSE CODE: 23UCB5E02

TITLE OF THE COURSE: ELECTIVE - BUSINESS ORGANISATION AND MODELS
(*Entrepreneurship & Skill Development)*

OBJECTIVES

- To enable the students to learn principles and concepts of Business.
- To provide a theoretical knowledge about the process of decision making with models of business.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Classify the basic ideas of Business	**K1**
CO 2	Indicate the Preparation method of business models.	**K2**
CO 3	Outline the financial models of business	**K3**
CO 4	Illustrate the marketing and selling models to promote business	**K3**
CO 5	Apply the models of HR in business	**K3**

Syllabus

Credit Points - 4 **Instructional Hours: 75 hours**

Unit I: Introduction to Business (K1) (15 hours)

Meaning of Business – Entrepreneur (Meaning, Characteristics of an entrepreneur)- Enterprise- a business venture- Business idea and opportunity- Examining some business ideas in agriculture, agro-based enterprises, general trade (including shops), manufacturing products and services (including hotels) and their unique features by incorporating outsourcing.

Unit II: Business Plan (K2) (15 hours)

Preparing a Business Plan – Retail selling grocery shop; a textiles selling shop; any other consumer goods selling business; a small scale manufacturing unit –Printing Press- Electrical and Electronic goods dealership. Contract works as business - Estimating the returns or profits-Preparing a conceptual and graphic model.

Unit III: Financing Model (K3) (15 hours)

Financing model for a business: Sources for a small business- owned capital, friends and relatives;

banks; government sources; suppliers and customers; interest and other costs and the terms and conditions attached to such sources and investing the finance in assets-The working capital cycle.

Unit IV: Marketing and Selling Models (K3) (15 hours)

Marketing and Selling models- Advertising and soliciting customers, customer relationship; Quality assurance; Pricing Methods; Competition and strategies in facing the competition.

Unit V: Human Resources in Business (K3) (15 hours)

Applications – Credit Risk Modeling – Fraud Detection – Net Lift Response Modeling Churn Prediction – Recommender Systems – Web Analytics – Social Media Analytics Business Process Analytics.

Note: 100% Theory.

Text book

1. Y.K.Bhushan - Business Organisation and Management, Sultanchand& Sons, 2012 edition.

2. C.B. Gupta – Business Organisation and Management, Mayur Paperbacks, 2011 Edition.

Reference Books

1. Rashmi Bansal - Take Me Home: The Inspiring Stories of 20 Entrepreneurs, Westlands, 2014 edition.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
II	Business Plan	YouTube	https://youtu.be/ZEMbKzy7FD8?si=_WJb0hXtCukXJB7A
V	Credit Risk Modeling	YouTube	https://youtu.be/NSfxb5hM3_g?si=SWydWsjcP38SKc3G

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3	1	3	3	1	1	1	3	1	3	3	3	3	3
CO2	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO3	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO4	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO5	3	2	3	3	3	1	1	3	3	3	3	3	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C.Goldbell Rachel	**Name: Dr.C.Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name:Dr.S.Jaculin Arockia Selvi	**(Principal)**

				
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SEMESTER: V

COURSE CODE: 24UCB5SB3

TITLE OF THE COURSE: SKILLED BASED- PYTHON PROGRAMMING

(*Employability & Skill Development)*

OBJECTIVES

- To impart knowledge on functions of python and data types.
- To understand the need and importance of object oriented programming

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Understand the features of python and various data types.	**K1**
CO 2	Gain knowledge on Python Statements	**K3**
CO 3	Acquire knowledge on Object Oriented Programming	**K3**
CO 4	Have knowledge on the Concept of String	**K2**
CO 5	Be familiar with Error Handling	**K2**

Syllabus

Credit Points - 4 **Instructional Hours: 75 hours**

UNIT- I: Introduction to Python (K1) **15 hours**

Introduction to Python: Introduction-Features of Python-Paradigms-Uses-Basic Data Types-Strings-Lists and Tuples.

(Self-study: Basic Data Types)

UNIT - II: Python Statements (K3) **15 hours**

Python Statements: Conditional Statements-Looping-Feature of function-Types of function-Search-Scope-Recursion-Iterators-Iterable object-generators.

Beyond Curriculum: Conditional Statements-Looping

UNIT – III: Object Oriented Programming (K3) **15 hours**

Object Oriented Programming: Introduction to OOP-Creating New Types-attributes and Functions-Elements of OOP-Classes and objects-Constructor-Constructor Overloading-Destructor-Inheritance.

(Self-Study: Elements of OOP)

UNIT – IV: Concept of String (K2) **15 hours**

Introduction to String-Concatenation, Appending, Multiplying String-Slice Operation-String Module-Regular Expression-Types of files-Opening and Closing File-Reading and Writing File

UNIT V: Error Handling (K2) **15 hours**

Error Handling: Introduction to Errors and Exceptions-Handling Exceptions-Multiple Except Block-else without Block-Instantiation Exception-Handling Exception in Invoked Function-Built in and User Defined Exception-Finally Block.

Note: 100% Theory.

TEXT BOOKS

1. Harsh Bhasin-"Python for Beginners"-New Age International Pvt Limited.

2. Reema Thareja- "Python Programming Using Problem Solving Approach"-Oxford University Press

REFERENCE BOOK

1. Wesley J.Chun-Python Applications Programming-Pearson India Education Services Pvt Ltd (Third Edition)

2. Kenneth A.Lambert, B.L.Juneja, M.Arunachalam, G.Balakrishnan-Problem Solving and Python Programming –Cengage Learning Pvt.Ltd.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
II	Looping	Javatpoint	https://www.javatpoint.com/python-loops
IV	String	Javatpoint	https://www.javatpoint.com/python-strings

MAPPING OF CO'S WITH POs/PSOs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO 1	3	1	1	1	1	3	1	1	3	1	3	3	3
CO 2	3	1	1	3	1	3	1	1	3	3	1	3	3
CO 3	3	1	1	3	1	3	2	1	3	2	1	3	3
CO4	3	1	1	3	1	3	2	1	3	2	1	3	3

CO5	**3**	**1**	**1**	**3**	**1**	**3**	**2**	**1**	**3**	**2**	**1**	**3**	**3**

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Quiz)	Once in a semester

Course designed by:
Name: Dr.C. Goldbell Rachel

Verified by HOD:
Name: Dr.C. Goldbell Rachel

Checked by CDC:
Name: Dr.S.Jaculin Arockia Selvi

Approved by :

(Principal)

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SEMESTER V

COURSE CODE: 23IDSBCB1
TITLE OF THE COURSE: SKILL BASED - FUNDAMENTALS OF SQL
(*Skill Development)*
(Industry 4.0)

OBJECTIVES

- To provide comprehensive knowledge about relational database.
- To understand the NoSQL database management system

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Interpret relational database management concepts	**K1**
CO 2	Develop the tables using normalization	**K2**
CO 3	Gain knowledge on group functions	**K3**
CO 4	Understand the overview of user defined functions	**K2**
CO 5	Acquire knowledge on the concept NOSQL.	**K3**

Syllabus

Credit Points - 2 **Total hours: 45 hours**

UNIT–I: Introduction To DatabaseManagement System(K1) 9 hours

Introduction to database management system-Data models - Database system architecture-The SQL Language-Relational database Management System

UNIT-II: Normalization Process (K2) 9 hours

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

Unit–III:IntroductionToGroupFunctions(K3)9 hours

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-

UNIT – IV: User Defined Functions (K2) 9 hours

Introduction to processing date and time-Arithmetic with dates - Date Functions Introduction to PL/SQL-user defined functions-Triggers-Stored procedure.

UNIT – V: Overview and History Of NOSQL (K3) 9 hours

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.

Note: 100% Theory.

TEXT BOOK:

Pramod J. Sadalage & Martin Fowler - NoSql Distilled, Pearson Education Inc.,2013Edition.

REFERENCE BOOKS:

1. Ramon A Mata-Toledo Pauline K Cushman – Database Management System, Tata McGrew-Hill Publishing Company Limited, New Delhi, 2010, 2nd Edition.
2. Kristina Chodorow – MongoDB: The Definitive Guide, O'Reilly Media Inc., 2013 2nd Edition.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
I	Data models	geeksforgeeks	https://www.geeksforgeeks.org/data-models-in-dbms/

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3	1	1	1	2	1	3	2	3	2	1	3	3	2
CO2	3	1	1	1	2	1	3	2	3	2	1	3	3	2
CO3	3	1	1	1	2	2	3	2	3	2	1	3	3	2
CO4	2	1	1	1	2	2	3	2	3	2	1	3	3	2
CO5	2	1	1	1	2	2	3	2	3	2	1	3	3	2

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester

7.	Other Component (Letter writing)	Once in a semester

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Course designed by:
Name: Dr.C.Goldbell Rachel

Verified by HOD:
Name Dr.C.Goldbell Rachel

Checked by CDC:
Name:Dr.S.Jaculin Aelvi

Approved by :
PRINCIPAL
(Principal)

SEMESTER: VI

COURSE CODE:23UCB6C12

TITLE OF THE COURSE: CORE - HADOOP

(*Employability & Skill Development)*

Industry 4.0

OBJECTIVES

The main objectives of this course is:

- To explore and acquire skills in Hadoop,
- To educate the students on Pig and Hive in Hadoop

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Relate Hadoop concepts with Datasets	K2
CO 2	Outline the use of Hadoop distribution file system	K3
CO 3	Experiment with MacReduce application for development	K3
CO 4	List the features of MacReduce applications	K3
CO 5	Apply PIG and Hive concepts to integrate	K3

Syllabus

Credit Points - 4 **Instructional hours: 60 hours**

UNIT I: Meet Hadoop & Map Reduce (K2) ***12 Hours***

Meet Hadoop: Data – Data Storage and Analysis – Comparison with other systems – A brief history of Hadoop – The Apache Hadoop Project – Map Reduce: A weather dataset – Scaling out - Hadoop streaming - Hadoop pipes.

UNIT II: Hadoop Distributed Filesystem (K3) ***12 Hours***

The Hadoop Distributed Filesystem: The design of HDFS – HDFS concepts – The Command Line interface – Hadoop File Systems – The Java Interface – Data Flow – Parallel copying with distcp – Hadoop archives. **Hadoop i/o:** Data Integrity – Compression – Serialization – File based data structure.

UNIT III: MapReduce Application (K3) ***12 Hours***

Developing a MapReduce Application: The Configuration API – Configuring the development environment – Writing a Unit Test – Running locally on test data – Running on a cluster – Tuning a job – Map Reduce workflows. **MapReduce Types and Formats:** MapReduce Types – Input Formats – Output Formats.

UNIT IV: MapReduce Features (K3) ***12 Hours***

MapReduce Features: Counters – Sorting – Joins – Side Data Distribution – MapReduce library classes. **Setting up a Hadoop Cluster:** Hadoop Specification – Cluster setup and installation – SSH Configuration – Hadoop Configuration – Post Installation – Benchmarking a

Hadoop Cluster – Hadoop in the cloud.

UNIT V: PIG & HIVE (K3) ***12 Hours***

PIG: Features – modes – modes – PIG Latin – Dataset – Commands and Functions – Operators – Evaluation Functions – Batch Mode – Embedded Mode – PIG vs. SQL. **HIVE:** Features – Architecture – Data Units – HIVE Quesry Languages – Database Operations – Tables – Joins – HIVE vs. PIG.

Note: 100% Theory.

TEXT BOOKS:

1. Tom White - Hadoop: The Definitive Guide, O"Reilley, 4th Edition,2015.

REFERENCE BOOKS:

1. Mark Kerzner, Sujee Maniyam - Hadoop Illuminated, Git-Hub, 2016 Editio

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
II	HDFS concepts	YouTube	https://youtu.be/nRX4_3qf3rc?si=bjijsjw5AmUUtEY
IV	MapReduce Features	YouTube	https://youtu.be/cHGaQz0E7AU?si=tQEdHYhyhfSsbr43

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	**3**	**3**	**3**	**3**	**3**	**3**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**2**
CO2	**3**	**3**	**3**	**3**	**3**	**3**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**3**
CO3	**3**	**3**	**3**	**3**	**3**	**3**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**3**
CO4	**3**	**3**	**3**	**3**	**3**	**3**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**3**
CO5	**3**	**3**	**3**	**3**	**3**	**3**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**3**

Correlation: 3-High, 2-Medium, 1-Low.

ASSESSMENT TOOLS

S.No.	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Field visit: Inventory Management)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C.Goldbell Rachel	**Name: Dr.C.Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name: Dr.S.Jaculin Arockia Selvi	**(Principal)**

				
Dr.M.NIRMALA Assistant Professor, Department of Commerce, Bharathiar University, Coimbatore	**Dr.T.M.HEMA LATHA** Dean School of Commerce Rathinam College of Arts and Science Coimbatore	**Dr.G.VENGATESAN** Associate Professor and Head Dept of B.Com(Business Analytics) KPR College of Arts Science and Research Coimbatore	**Dr. S. GOWRI** Associate Professor and Head Dept of B.Com(Business Analytics) PSG College of Arts & Science , Coimbatore	**Mr.B.SIVA KUMAR** CEO, Crewmates HR Consultancy Firm & LEN DAN Event Management, Coimbatore.

SEMESTER: VI

COURSE CODE: 23UCB6C13

TITLE OF THE COURSE: CORE - BANKING AND AUDIT

(*Entrepreneurship & Employability)*

OBJECTIVES

- To impart knowledge on functions of banks, types of deposits and recent trends inBanking.
- To educate the students on the purpose and process of auditing books of accounts.

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Understand the relationship between a banker and a customer and various types of deposits.	**K1**
CO 2	Gain knowledge with the Banking operations	**K3**
CO 3	Understand the objectives, scope and need for auditing	**K1**
CO 4	Acquaint with audit planning and programme	**K2**
CO 5	Acquire knowledge on appointment, powers and duties of an auditor.	**K2**

Syllabus

Credit Points - 4 **Instructional Hours: 75 hours**

UNIT- I: Introduction to Banking (K1) **15 hours**

Banking: – Banker – Customer – General Relationship – Special Relationship – Garnisheeorder – Rights of banker - Duties of banker - Functions of Commercial Banks – Types of Deposits : Fixed, Current, Saving and Recurring deposit.

(Self-study: Types of Deposits)

UNIT - II: Operations of Banking (K3) **15 hours**

Negotiable Instruments: - Endorsement – Types of endorsement – Cheque: Meaning – Crossing of cheques - Payment of Cheques - Collection of Cheques - Bills of Exchange and Promissory Notes. Commercial Banking Operations: Payment and settlement system-New age clearing and new age payment – Online Banking - E-banking - Mobile banking, RTGS, SWIFT,

Electronic Clearing System (ECS), E -Payments: Electronic Fund Transfer (EFT)- E-money- Safeguard for internet banking - KYC Norms and Anti– Money Laundering. (Industry 4.0)

Beyond Curriculum: Neo banking - Advantages of neo banking – difference betweenneo banking and normal banking

UNIT-III: Audit and Audit Planning (K1) 12hours

Definition of audit, auditing, auditor, auditee – Difference between book-keeping, accountancy and auditing - qualification of an auditor- objectives and scope of audit - auditing Vsinvestigation - Professional Ethics. Audit planning: – Benefits of audit planning - Factors affecting audit planning - internal control – internal check. Audit Programme – Advantages of Audit programme - audit procedure –audit working papers – documentation.

(Self – Study: Difference between book- keeping, accountancy and auditing)

UNIT - IV: Verifications and Valuation of Assets and Liabilities (K2) 14 hours

Meaning of verification - Cash transactions, trading transactions, Valuation of assets and liabilities – Auditor's position as regards the valuation of assets - **Audit under computerized environment (Industry 4.0)**- Audit report (Concept only)

(Self – Study: Audit report (Concept only))

UNIT - V: Kinds of audit and Company Audit (K2) 12 hours

Concurrent Audit, Internal Audit, Final Audit, Interim Audit, Balance Sheet Audit, Environmental Audit**,** Operation Audit, Management Audit, Cost Audit, Propriety Audit – merits and demerits of an audit. Appointment, reappointment and removal of auditors- Qualification, powers, remuneration and expenses of an auditor- rotation of auditors- rights and duties of company auditors.

Note: 100% Theory.

TEXT BOOKS:

1. Gordon E and Dr. Natarajan K, Banking Theory Law and Practice. (29th Edition)Himalaya Publishing House Pvt Ltd., Mumbai (2021),
2. Tandon B.N, 14th edition, Practical Auditing, Sultan Chand & Company, Delhi (2012)

REFERENCE BOOKS:

1. Guruswamy S, Banking Theory Law and Practice, (5th Edition) Vijay Nicole ImprintsPrivate Ltd, Mumbai. (2018)
2. Tripathy D.N 8th edition, Principles and Practice of Auditing, Tata McGraw – Hill Publication, New Delhi. , (2012)
3. Dinkar Pagare, 13th revised edition, Principles and Practice of Auditing, Sultan Chand & Company Ltd, Delhi. (2020)

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
II	Introduction to Negotiable Instruments	e-PG Pathshala	https://youtu.be/dsgRcapIh2g
IV	Audit under computerized environment	ACA IPCC Material	https://youtu.be/4yb-6QhQ6CM

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	**3**	**1**	**1**	**1**	**1**	**3**	**1**	**1**	**3**	**1**	**3**	**3**	**3**	**1**
CO2	**3**	**1**	**1**	**3**	**1**	**3**	**1**	**1**	**3**	**3**	**1**	**3**	**3**	**2**
CO3	**3**	**3**	**1**	**1**	**1**	**1**	**2**	**3**	**1**	**3**	**3**	**3**	**3**	**3**
CO4	**3**	**3**	**1**	**1**	**1**	**2**	**2**	**3**	**1**	**3**	**3**	**3**	**3**	**3**
CO5	**3**	**3**	**3**	**1**	**1**	**2**	**2**	**3**	**1**	**3**	**1**	**3**	**3**	**3**

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C.Goldbell Rachel	**Name: : Dr.C.Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name: Dr.S.Jaculin Arockia Selvi	**(Principal)**

				
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SEMESTER VI
COURSE CODE :23UCB6CP3
TITLE OF THE COURSE : CORE PRACTICAL III - HADOOP
(*Employability & Skill Development)*

COURSE OBJECTIVES :

- To Understand various statistical calculations
- To explore and acquire skills in Python Programming

COURSE OUTCOMES :

At the completion of the course the student will have the ability to

CO 1	Relate data as data sets	**K2**
CO 2	Describe PIG AND HIVE	**K3**
C03	Relate analysis techniques to more complex data sets	**K3**

SYLLABUS

Total Credits - 4 **Instructional hours: 60**

1. Perform File Management in Hadoop.
2. Perform Health Care Analysis using Map Reduce.
3. Perform Word Count in Map Reduce using Politics dataset.
4. Find Maximum temperature using Map Reduce.
5. Perform Inner joins in PIG using Human Resource dataset.
6. Program to perform job tracker, word count using Travel dataset.
7. Perform PIG operations using Telecom dataset.
8. Perform HIVE operations using Politics dataset.
9. Cross Operation in PIG using Logistics dataset.
10. Order the data by Ascending and Descending operations Retail Dataset.

Note: Distribution of Mark 100% Practical.

MAPPING OF CO'S WITH PO'S/PEO'S

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	3	3	3	3	2	1	2	2	2	1	1	2	2	3
CO 2	3	3	2	3	3	1	1	2	1	2	2	2	2	2
CO 3	2	2	2	2	2	2	1	2	1	1	1	1	3	3

(Correlation: 3-High, 2-Medium, 1-Low)

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examination	Once in a semester
2.	Test	Twice in a semester
3.	Record	Every Exercise

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SEMESTER VI
COURSE CODE : 23UCB6E01

TITLE OF THE COURSE : ELECTIVE: BUSINESS INTELLIGENCE

(***Entrepreneurship & Skill Development)***

Industry 4.0

Course Objective

The main objective of this course is :

- To equip knowledge on technical components of Business Intelligence

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Understand the Framework of Business Intelligence	**K1**
CO 2	Able to now the business performance management	**K2**
CO 3	Understand the concepts of web mining	**K3**
CO 4	Able to know the implementation of BI	**K3**
CO 5	Determine the emerging trends in BI	**K3**

Syllabus

Credit Points - 4 **Instructional Hours: 75 Hours**

Unit I Introduction to Business Intelligence (K1) (15 Hours)

Introduction to Business Intelligence: Framework for Business Intelligence–Intelligence Creation– Transaction Processing Versus Analytic Processing–Major Tools and Techniques of BI.

Unit II Performance Management (K2) (15 Hours)

Business Performance Management – Strategize–Plan–Monitor Performance Measurement– BPM Methodologies–Performance Dashboards and Scorecards.

(Self Study : BPM Methodologies)

Unit III Web Mining (K3) (15 Hours)

Text and web mining – text mining concepts and definitions – natural language processing – text mining applications – text mining process – text mining tools – web mining overview – web content mining and web structure mining – web usage mining – web mining success stories

Unit IV Implementation (K3) (15 Hours)

Business Intelligence Implementation: Integration and Emerging Trends– Implement BI– BI and Integration implementation –Connecting BI systems to Databases and other enterprise systems.

Unit V Emerging Trends in BI (K3) (15 Hours)

On-Demand BI–Issues of Legality, Privacy and Ethics–Emerging Topics in BI – the web2.0 revolution – online social networking – virtual worlds – social networks and BI: collaborative decision making – RFID and new BI application opportunities – reality mining

Note: 100% Theory.

Text book

1. Efraim Turban, Ramesh Sharda, Dursun Delen and David King – Business Intelligence – A Managerial Approach, Pearson, 2012, 2ndEdition

Reference Books

1. Galit Shmueli, Nitin R. Patel and Peter C. Bruce – Data Mining for Business Intelligence, Prentice Hall, 2009, 3rd Edition.
2. Stuart Russel and Peter Norvi, Artificial Intelligence: A Modern Approach, Prentice Hall, 2009, 3rd Edition.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
III	Text and web mining	YouTube	***https://youtu.be/I3cjbB38Z4A?si=LEmBIy4ybhIYQ9nb***
V	RFID and new BI application	YouTube	https://youtu.be/Ukfpq71BoMo?si=La8WFwhe9LJqvNnX

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3	1	3	3	1	1	1	3	1	3	3	3	3	3
CO2	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO3	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO4	3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO5	3	2	3	3	3	1	1	3	3	3	3	3	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component	Once in a semester

Course designed by:	**Verified by HOD:**
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SEMESTER VI

COURSE CODE : 23UCB6E02

TITLE OF THE COURSE : ELECTIVE: BRAND MANAGEMENT
(*Employability, Entrepreneurship & Skill Development)*

Course Objective

The main objective of this course is :

- To teach the importance of brand and its impacts among the customers

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Recall the basic concepts of branding and related terms	**K1**
CO 2	Compare brand image building and brand positioning strategies	**K2**
CO 3	Analyze the impact of brand, brand loyalty and brand audit.	**K3**
CO 4	Explain the brand rejuvenation and brand monitoring process	**K3**
CO 5	Apply various strategies for brand building and monitoring	**K3**

Syllabus

Credit Points - 4 **Instructional Hours: 75 hours**

Unit I INTRODUCTION TO BRANDING (K1) (15 Hours)

Introduction- Basic understanding of brands – concepts and process – significance of a brand – brand mark and trade mark – different types of brands – family brand, individual brand, private brand – selecting a brand name – functions of a brand – branding decisions – influencing factors.

Unit II BRAND ASSOCIATIONS (K2) (15 Hours).

Brand Associations: Brand vision – brand ambassadors – brand as a personality, as trading asset, Brand extension – brand positioning – brand image building.

(Self Study : Brand positioning)

Unit III BRAND IMPACT (K3) (15 Hours)

Brand Impact: Branding impact on buyers – competitors, Brand loyalty – loyalty programme –

brand equity – role of brand manager – Relationship with manufacturing - marketing- finance - purchase and R & D – brand audit.

Unit IV BRAND REJUVENATION (K3) (15 Hours).

Brand Rejuvenation: Brand rejuvenation and re-launch, brand development through acquisition takes over and merger – Monitoring brand performance over the product life cycle. Co-branding.

Unit V Brand Strategies **(K3) (15 Hours)**

Brand Strategies: Designing and implementing branding strategies – Case studies.

Note: 100% Theory.

Text book

1. Kevin Lane Keller, "Strategic brand Management", Person Education, New Delhi, 2003.
2. Lan Batey Asian Branding – "A great way to fly", Prentice Hall of India, Singapore 2002.

Reference Books

1. Jean Noel, Kapferer, "Strategic brand Management", The Free Press, New York, 1992.

MAPPING OF CO'S WITH POs/PSOs

		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1		3	1	3	3	1	1	1	3	1	3	3	3	3	3
CO2		3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO3		3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO4		3	2	3	3	3	1	1	3	1	3	3	3	3	3
CO5		3	2	3	3	3	1	1	3	3	3	3	3	3	3

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester

7.	**Other Component**	**Once in a semester**

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SEMESTER VI

COURSE CODE: 23UCB6SB4

TITLE OF THE PAPER : SKILL BASED – STRATEGIC MANAGEMENT

Objectives

- To understand the components of business environment
- To know the need and importance of formulating strategies

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Remember Strategic management process.	**K1**
CO 2	Understand the factors influencing various types of environment and strategies	**K2**
CO 3	Apply knowledge and abilities in formulating strategies and strategic plans.	**K3**
CO 4	Analyze the relevant tools to resolve the contemporary issues in strategic management	**K2**
CO 5	understand the challenges in the implementation of strategies	**K3**

Syllabus

Credit Points - 2 **Total hours: 45 hours**

Unit I Introduction to Strategic Management (K1) (12 hours)

Strategic Management: Meaning and nature - Strategic management imperative - Vision, Mission and Objectives - Strategic levels in organizations

Unit II Strategic Analysis (K2) (12 hours)

Strategic Analysis: Situational Analysis – SWOT Analysis, TOWS Matrix, Portfolio Analysis – BCG Matrix. Strategic Planning: Meaning, stages – alternatives - strategy formulation.

Unit III Formulation of Functional Strategy (K3) (12 hours)

Formulation of Functional Strategy: Marketing strategy - financial strategy - Production strategy - Logistics strategy - Human resource strategy

Unit IV Strategy Implementation and Control: (K2) (12 hours)

Strategy Implementation and Control: Organizational structures - establishing strategic business units - Establishing profit centers by business, product or service, market segment or customer - Leadership and behavioral challenges**.**

Unit V Reaching Strategic Edge (K3) (12 hours)

Reaching Strategic Edge: Business Process Reengineering - Benchmarking - Total Quality Management - Six Sigma – C.K. Prahalad's concepts and tasks of TQM - Contemporary Strategic Issues

Note: 100% Theory

Text Book:

1) Subba Rao.P (2013), *Business Policy and Strategic Management*, Himalaya Publishing House, Mumbai, 5th Edition.

Reference Books:

1) Rao.VSP, Harikrishna.C(2009), *Strategic Management – Text and Cases*, Excel books, 1st Edition.

2) Charles W.L, Hill Gareth R.Jones (2016), *Strategic Management and Integrated Approach*, Cengige learning India Pvt.Ltd, New Delhi, 4th Edition..

MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	**3**	**1**	**1**	**2**	**3**	**3**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**1**
CO2	**3**	**1**	**1**	**2**	**2**	**2**	**1**	**1**	**2**	**2**	**3**	**2**	**3**	**1**
CO3	**3**	**1**	**2**	**2**	**1**	**1**	**1**	**2**	**2**	**3**	**1**	**3**	**3**	**1**
CO4	**3**	**1**	**2**	**2**	**3**	**2**	**3**	**2**	**2**	**3**	**2**	**2**	**3**	**1**
CO5	**3**	**1**	**1**	**1**	**3**	**2**	**3**	**2**	**3**	**3**	**2**	**3**	**3**	**2**

Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No.	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester
5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Quiz)	Once in a semester

Course designed by:	**Verified by HOD:**
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SEMESTER VI

COURSE CODE: 23IDSBCB1
TITLE OF THE COURSE: SKILL BASED - FUNDAMENTALS OF SQL
(*Skill Development)*
(Industry 4.0)

OBJECTIVES

- To provide comprehensive knowledge about relational database.
- To understand the NoSQL database management system

COURSE OUTCOMES

At the end of the course the student will be able to:

CO 1	Interpret relational database management concepts	**K1**
CO 2	Develop the tables using normalization	**K2**
CO 3	Gain knowledge on group functions	**K3**
CO 4	Understand the overview of user defined functions	**K2**
CO 5	Acquire knowledge on the concept NOSQL.	**K3**

Syllabus

Credit Points - 2 **Total hours: 45 hours**

UNIT–I: Introduction To DatabaseManagement System(K1) 9 hours

Introduction to database management system-Data models - Database system architecture-The SQL Language-Relational database Management System

UNIT-II: Normalization Process (K2) 9 hours

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

Unit–III:IntroductionToGroupFunctions(K3)9 hours

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-

UNIT – IV: User Defined Functions (K2) 9 hours

Introduction to processing date and time-Arithmetic with dates - Date Functions Introduction to PL/SQL-user defined functions-Triggers-Stored procedure.

UNIT – V: Overview and History Of NOSQL (K3) 9 hours

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.

Note:100% Theory.

TEXT BOOK:

Pramod J. Sadalage & Martin Fowler - NoSql Distilled, Pearson Education Inc.,2013Edition.

REFERENCE BOOKS:

1. Ramon A Mata-Toledo Pauline K Cushman – Database Management System, TataMcGrew-Hill Publishing Company Limited, New Delhi, 2010, 2nd Edition.
2. Kristina Chodorow – MongoDB: The Definitive Guide, O'Reilly Media Inc., 2013 2nd Edition.

BLENDED LEARNING

UNIT	TOPIC	SOURCE	LINKS
I	Data models	geeksforgeeks	https://www.geeksforgeeks.org/data-models-in-dbms/

MAPPING OF CO'S WITH POs/PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3	1	1	1	2	1	3	2	3	2	1	3	3	2
CO2	3	1	1	1	2	1	3	2	3	2	1	3	3	2
CO3	3	1	1	1	2	2	3	2	3	2	1	3	3	2
CO4	2	1	1	1	2	2	3	2	3	2	1	3	3	2
CO5	2	1	1	1	2	2	3	2	3	2	1	3	3	2

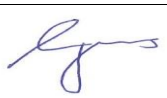
Correlation: 3-High, 2-Medium, 1-Low

ASSESSMENT TOOLS

S.No	Assessment Methods	Frequency of Assessment
1.	End semester Examinations	Once in a semester
2.	CIA I	Once in a semester
3.	CIA II	Once in a semester
4.	Model Examination	Once in a semester

5.	Assignment (Unit I & II)	Twice in a semester
6.	Seminar (Unit III & IV)	Twice in a semester
7.	Other Component (Letter writing)	Once in a semester

Course designed by:	**Verified by HOD:**
Name: Dr.C.Goldbell Rachel	**Name Dr.C.Goldbell Rachel**
Checked by CDC:	**Approved by :**
Name:Dr.S.Jaculin Arockia Selvi	**(Principal)**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