E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 625 014.

(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
Re-accredited (3rd Cycle) with Grade A+ & CGPA 3.51 by NAAC

DEPARTMENT OF INFORMATION TECHNOLOGY

TANSCHE - CBCS With OBE

BACHELOR OF SCIENCE

PROGRAMME CODE - I

COURSE STRUCTURE

(w.e.f. 2023 – 2024 Batch onwards)

E.M.G.YADAVA WOMEN'S COLLEGE, MADURAI–14.
(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
Re–accredited(3ʳᵈCycle) with Grade A⁺& CGPA 3.51by NAAC

DEPARTMENTOFINFORMATIONTECHNOLOGY–UG
TANSCHE – CBCS with OBE

COURSE STRUCTURE
(w.e.f. 2023 –2024 Batch onwards)

Semester	Part	Course Code	Course Title	Teaching hrs. (per week)	Duration of Exam (hrs.)	CIA	SE	Total	CREDITS
III	I	23OU1TA3	Tamil	6	3	25	75	100	3
	II	23OU2EN3	General English- III	6	3	25	75	100	3
	III	23OUIT31	**Core Course-5:** Relational Database Management System	5	3	25	75	100	5
		23OUIT3P	**Core Course-6:** Relational Database Management System Lab	5	3	40	60	100	5
		23OUITGEIT3	**(Elective) GEC 3:** Cost and Management Accounting	4	3	25	75	100	3
	IV	23OUITSEC31	**SEC 4:** Enterprise Resource Planning	1	3	25	75	100	1
		23OUITSEC32P	**SEC 5:** PHP Scripting Lab	2	3	40	60	100	2
			Environmental Studies(EVS)	1	-	-	-	-	-
IV	I	23OU1TA4	Tamil	6	3	25	75	100	3
	II	23OU2EN4	General English-IV	6	3	25	75	100	3
	III	23OUIT41	**Core Course–7:** .NET Programming	5	3	25	75	100	5
		23OUIT4P	**Core Course-8:** .NET Programming Lab	3	3	40	60	100	5
		23OUITDSE4A	**(Elective) DSEC4:** IoT and its Applications	5	3	25	75	100	3
	IV	23OUITSEC4P	**SEC6:** Web Designing Lab	2	3	40	60	100	2
		23OUITSEC42	**SEC 7:** Human Computer Interaction	2	3	25	75	100	2
		23OU4EV4	Environmental Studies (EVS)	1	3	25	75	100	2

Semester IV:
Elective - DSEC 4
1. IOT and its Applications – 23OUITDSE4A
2. Cryptography – 23OUITDSE4B

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: II B.Sc.			
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	Core	23OUIT31	Relational Database Management System	5	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔		

Course Objectives:

1. To understand the relational databases and uses of PL/SQL.

2. To apply Schema, ER-Model, normalization, transaction, concurrency and recovery on tables using SQL and PL/SQL.

3. To analyze and manage the distributional database, transaction, concurrency control and query languages.

4. To access database based on models and normal forms.

5. To design and construct tables and manipulate it effectively using PL/SQL database objects.

Course Content:

Unit- I:

Introduction to Databases: Introduction – Characteristics of the Database Approach – Actors on the Scene – Workers behind the scene – Advantages of using DBMS Approach. Overview of database and Architectures: Data Models, Schemas, and Instances – Three-schema Architecture and Data Independence – Database languages & Interfaces –Database System Environment– Centralized & Client Server Architecture for DBMS - Classification of DBMS.

Unit- II:

Basic Relational Model: Relational Model Concepts – Relational Model Constraints and Relational Database Schemas–Update Operations, Tractions, dealing with Constraint Violations– Formal Relational Languages: Unary Relational Operations: SELECT and PROJECT–Relational Algebra Operations from Set Theory–Binary Relational Operations: JOIN and DIVISION – Examples of Queries in Relational Algebra.

Unit- III:

Conceptual Data Modeling using the ER Model: Using High-Level Conceptual Data Models for Database Design– An example DB application –Entity Types, Entity Sets, Attributes, and Keys–

Relationship Types, Relationship sets, Roles, and Structural Constraints –Weak entity types – Example- Mapping a Conceptual Design into Logical Design: Relational Database Design using ER-Relational Mapping– Mapping ER Model Constructs to Relations

Unit- IV:

Functional Dependencies and Normalization for Relational Database: Functional Dependencies– Definition of Functional Dependency–Normal Forms based on Primary Keys–Normalization of Relations–FirstNormalForm–SecondNormalForm–ThirdNormalForm–BCNF-FourthNormal Form-Fifth Normal Form.

Unit- V:

SQL: The Relational Database Standard: Data definition, Constraints, and schema changes in SQL – Basic Queries in SQL – More complex SQL Queries–Insert, delete and update statements in SQL– ViewsinSQL.PL/SQL: Introduction to PL/SQL – More on PL/SQL – Error Handling in PL/SQL – Oracles Named Exception Handlers – Stored Procedures andFunctions– ExecutionofProceduresandFunctions–Advantages–Procedures Vs. Functions–Syntax for Creating Procedures and Functions– Deleting a Stored Procedure or Function – Oracle Packages – Database Triggers – Types Of Triggers – Deleting a Trigger – Raise-Application Error Procedure

Text Books:

1. Ramez Elmasri, Shamkant B. Navathe (2014). *Database Systems*. Sixth edition. Pearson Education. New Delhi.

2. Ivan Bayross. (2003 Reprint). *SQL, PL/SQL-The Programming Language of Oracle.* Second Revised Edition. BPB Publications. New Delhi.

Reference Book(s)

1. Abraham Silberschatz, Henry F.Korth, S.Sudarshan. (1998). *Database System Concepts*, Tata McGraw Hill Publication, 4th Edition. Kernighan and Ritchie. *The C Programming Language*. Second Edition. Prentice Hall.

2. AtulKahate. *Introduction to Database Management systems*. Pearson Education.

3. CarloZaniolo. Stefano Ceri. Christos Faloustsos. Snodgrass. Subrahmanian. R.T.&Morgan Kaufman. (1997). *Advanced Database Systems.*

4. George Koch .& Kelvin Loney. (2002). *Oracle9i The Complete Reference*, Oracle Press. Tata McGraw Hill Publication.

5. Ramez Elmasri. Shamkant ,B,&Navathe. (2014). *Database Systems*. Pearson Education. New Delhi. Sixth Edition.

Websites and e-Learning resources

1. http://awtrey.com/tutorials/dbeweb/database.php
2. http://www.slideshare.net/SalamaAlbusaidi/emerging-database-technology-multimedia-database.
3. http://www.tutorialspoint.com/dbms/index.htm
4. http://www.tutorialspoint.com/plsql/index.htm
5. https://opentextbc.ca/dbdesign/chapter/chapter-11-functional-dependencies/

Rationale for nature of Course:

✓ **Knowledge and Skill:** Fundamental knowledge of computing, fluency in a programming language, and excellent debugging and problem-solving skills.

✓ **Activities to be given:** Students shall be asked to create a simple program to use logical variable names to avoid any confusion

COURSE OUTCOMES:

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

	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Outline the fundamental RDBMS concepts and PL/SQL	K1 to K3
CO2	Apply database operations, mapping, normalization, SQL and PL/SQL	K1 to K4
CO3	Analyze the requirements to implement relational database concepts	K1 to K3
CO4	Evaluate the data base based on various models and normalization.	K1 to K4
CO5	Design and construct normalized tables and manipulate it effectively using SQL and PL/SQL database objects	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (75 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	Introduction to Databases: Introduction – Characteristics of the Database Approach – Actors on the Scene – Workers behind the scene – Advantages of using DBMS Approach. Overview of database and Architectures: Data Models, Schemas, and Instances – Three-schema Architecture and Data Independence – Database languages & Interfaces – Database System Environment– Centralized & Client Server Architecture for DBMS - Classification of DBMS.	15	CO1	Chalk and Talk, PPT, quiz, on the spot test
II	Basic Relational Model: Relational Model Concepts – Relational Model Constraints and Relational Database Schemas – Update Operations, Tractions, Dealing with Constraint Violations – Formal Relational Languages: Unary Relational Operations: SELECT and PROJECT – Relational Algebra Operations from Set Theory – Binary Relational Operations: JOIN and DIVISION – Examples of Queries in Relational Algebra.	15	CO2	Chalk and Talk, PPT, quiz, on the spot test
III	Conceptual Data Modeling using the ER Model: Using High-Level Conceptual Data Models for Database Design – An example DB application – Entity Types, Entity Sets, Attributes, and Keys – Relationship Types, Relationship sets, Roles, and Structural Constraints – Weak entity types – Example- Mapping a Conceptual Design into Logical Design: Relational Database Design using ER- Relational Mapping – Mapping EER Model Constructs to Relations	15	CO3	Chalk and Talk, PPT, quiz, on the spot test

IV	Functional Dependencies and Normalization for Relational Database: Functional Dependencies – Definition of Functional Dependency – Normal Forms based on Primary Keys – Normalization of Relations – First Normal Form – Second Normal Form – Third Normal Form – BCNF- Fourth Normal Form- Fifth Normal Form.	15	CO4	Chalk and Talk, PPT, quiz, on the spot test
V	SQL: The Relational Database Standard: Data definition, Constraints, and schema changes in SQL – Basic Queries in SQL – More complex SQL Queries – Insert, delete and update statements in SQL – Views in SQL. PL/SQL: Introduction to PL/SQL – More on PL/SQL – Error Handling in PL/SQL – Oracle_s Named Exception Handlers – Stored Procedures and Functions – Execution of Procedures and Functions – Advantages – Procedures Vs. Functions – Syntax for Creating Procedures and Functions – Deleting a Stored Procedure or Function – Oracle Packages – Database Triggers – Types Of Triggers – Deleting a Trigger – Raise-Application Error Procedure	15	CO5	Seminar, PPT presentation , Activity and Model Preparation

Mrs.R.Lakshmi
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY						Class: II B.Sc.		
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	Core Practical	23OUIT3P	Relational Database Management System Lab	5	5	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔	✔	

Course Objectives:

1.   To learn and implement SQL & PL/SQL.

2.   To choose appropriate SQL queries and PL/SQL block for the database.

3.   To implement SQL and PL/SQL blocks for the given problem effectively.

4.   To analyze the problem and Exception using queries and PL/SQL blocks.

5.   To design database tables, create Procedures, User- defined functions and Triggers.

Programs List:

SQL:

1.DDL Commands

2.DML Commands

3.DCL Commands

4.SQL Built-in functions

5.Using Sub Queries

PL/SQL:

6.Simple programs using PL/SQL

7.Procedures

8.User-defined functions

9.Exception Handling

10.Triggers

Text Book:
1. Michael McLaughlin. (2014).*Oracle Database PL/SQL Programming*. Printed in the United States of America. Published by O'Reilly Media, Inc.

Books for Reference

1. AtulKahate. *Introduction to Database Management systems*. Pearson Education.

2. Carlo Zaniolo. Stefano Ceri. Christos Faloustsos. Snodgrass.& Subrahmanian .R.T., Morgan Kaufman.V.S . *Advanced Database Systems.*

3. George Koch, Kelvin Loney. (2002). *Oracle9i:The Complete Reference*, Oracle Press. Tata McGraw Hill Publication.

4. RamezElmasri, Shamkant B, Navathe. (2014). *Database Systems*. Pearson Education. NewDelhi . Sixth Edition.

Web Resources / E-Books

1. http://awtrey.com/tutorials/dbeweb/database.php

2. http://www.slideshare.net/SalamaAlbusaidi/emerging-database-technology-multimedia-database.

3. http://www.tutorialspoint.com/dbms/index.htm

4. http://www.tutorialspoint.com/plsql/index.htm

5. https://opentextbc.ca/dbdesign/chapter/chapter-11-functional-dependencies/

Nature of the course

Developing of Oracle RDBMS, SQL* Plus, SQL – query structure, Exception Handling

Compilation and Run – time, user – defined, Stored procedures.

Activities to be given

Implement Programming

Activities on Employability Oriented

SQL Query Development

Problem Solving.

Pedagogy

Record Book writing, Program development and Demonstration, Practical sessions.

COURSE OUTCOMES:

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

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Understand the basic DDL,DML,DCL	K1 to K3
CO2	Illustrate and examine sub query and Build – in Functions.	K1 to K4
CO3	Infer the Exception handling programs in PL/SQL.	K1 to K3

CO4	Examine and implement the cursors.	K1 to K4
CO5	Infer and integrate the user-defined Functions ,Procedures and Triggers.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (75 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	1.DDL Commands 2.DML Commands	15	CO1	Demo & Practical Session
II	3.DCL Commands 4.SQL Built-in functions 5.Using Sub Queries	15	CO2	Demo & Practical Session
III	6.Simple programs using PL/SQL	15	CO3	Demo & Practical Session
IV	7.Procedures 8.User-defined functions	15	CO4	Demo & Practical Session
V	9.Exception Handling 10.Triggers	15	CO5	Demo & Practical Session

Mrs.R.Boomadevi
Course Designer

Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
DEPARTMENT OF INFORMATION TECHNOLOGY					**Class: II B.Sc.**			
III	Generic Elective Course	23OUITGEIT3	Cost and Management Accounting	3	4	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Course Objectives:

1. To Understand the basic concepts and terminologies used in cost accounting.
2. To Learn techniques such as cost-volume-profit analysis, make-or-buy decisions, and pricing strategies.
3. To Explore the role of management accounting in strategic planning and control.
4. To Recognize the ethical implications of cost and management accounting practices.
5. To Analyze financial data to support managerial decision-making.

Course Content:

Unit I: Introduction: Definition of Cost – Costing, Cost Accounting and Cost Accountancy – Scope and Objectives – Advantages and Limitations – Cost Accounting VS Financial Accounting and Cost Accounting VS Management Accounting – Classification of Cost – Elements of Cost – Preparation of Cost sheet

Unit II: Material : Material Control – Purchase Procedure – Different Levels of Stock of Materials – EOQ – Perpetual Inventory System – ABC Analysis – Inventory Turnover Ratio – Bin Card – Stores Ledger – Pricing of Material Issues (FIFO, LIFO and Average Methods).

Unit III: Management Accounting: Meaning – Definition – Characteristics – Scope – Objectives and Functions – Advantages – Limitations – Management Accounting Vs Financial Accounting – Management Accounting Vs. Cost Accounting– Tools and Techniques of Management Accounting.

Cash Flow Statement – Meaning – Importance – Advantages – Limitations – Preparation of Cash Flow Statements (As per Revised Accounting Standards) Simple Problems.

Unit IV: Financial Statement Analysis: Meaning – Importance and Limitations of Financial Statements – Techniques of Financial Statement Analysis – Comparative Statements– Common size statement – Trend Analysis (Theory Only).

Unit V:

Meaning – Advantages – Limitations – Classifications and Computation of Ratios (Simple Problems).

BOOKS FOR STUDY:

1. R.S.N.Pillai and Bhagavathi. (2006). *Cost Accounting* . S. Chand Publishing,
2. T.S. Reddy and Y.Hair Prasad Reddy. *Cost Accounting* . Margham publication.
3. S.P.Jain&K.L.Narang.(2014). *Advanced Cost Accounting by Sehgal Mysore.*
4. S.P. Iyengar. (2023). Cost Accounting. Sultan Chand & Sons.

Management Accounting:

1. S.N.Maheswari. *Management Accounting & Financial Control*
2. Management Accounting: T.S.Reddy and Y. Hari Prasad Reddy
3. Management Accounting: Manmohan&Goyal
4. Management Accounting: M.Y.Khan&P.K.Jain.
5. Management Accounting: GordenP.Jeyaram, N.Sundaram,R.Jeyachandran

Reference Book(s)

1.N.S. Zad : Cost & Management Accounting Taxmann Publications Pvt. Ltd.

2. Deepak Jain : Cost & Management Accounting Taxmann Publications Pvt. Ltd.

3. S.P. Jain & K.L. Narang : Cost and Management Accounting; Kalyani Publishers, 23, Daryaganj, New Delhi-110 002.

4. V.K. Saxena& C.D. Vashist : Cost and Management Accounting; Sultan Chand & Sons, 23, Daryaganj New Delhi -110 002.

5. M.N. Arora : Cost and Management Accounting (Theory and Problems); Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg, Kelewadi,Girgaon, Mumbai-400 004.

Websites and e-Learning resources

1. https://cbseacademic.nic.in/web_material/Curriculum/Vocational/2018/Accounting%20and%20Taxation/Cost_Accounting_Book_XII.pdfAdvanced Accountancy-P.C.Tulsian
2. https://www.drnishikantjha.com/booksCollection/Textbook%20of%20Financial%20Cost%20and%20Management%20Accounting%20(%20PDFDrive%20)%20(1).pdf
3. https://icmai.in/upload/Students/Syllabus2022/Fdn_Stdy_Mtrl/P2_Revised_1409_22.pdf
4. https://books.google.co.in/books?id=1IlGrCW6jm8C&pg=PP1&source=gbs_selected_pages&cad=1#v=onepage&q&f=false
5. https://www.hpuniv.ac.in/hpuniv/upload/uploadfiles/files/Advanced%20Cost%20Accounting%20mc%20301%20DSC_compressed(1).pdf

Rationale for nature of Course:

➤ **Knowledge and Skill:** To make students aware of fundamental concepts and techniques of Financial Accounting.

➤ **Activities to be given:** Students shall be analyze the financial statements.

COURSE OUTCOMES:

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

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Critically analyses and provide recommendations to improve the operations of organizations through the application of management accounting techniques;	K1 to K3
CO2	Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems.	K1 to K4
CO3	Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems.	K1 to K3
CO4	Integrate cost and management accounting information into strategic planning processes.	K1 to K4
CO5	Analyze ethical implications of cost and management accounting practices.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (60 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	**Introduction:** Definition of Cost – Costing, Cost Accounting and Cost Accountancy – Scope and Objectives – Advantages and Limitations – Cost Accounting VS Financial Accounting and Cost Accounting VS Management Accounting – Classification of Cost – Elements of Cost – Preparation of Cost sheet	12	CO1	Chalk and Talk, PPT, quiz, on the spot test
II	Material: Material Control – Purchase Procedure – Different Levels of Stock of Materials – EOQ – Perpetual Inventory System – ABC Analysis – Inventory Turnover Ratio – Bin Card – Stores Ledger – Pricing of Material Issues (FIFO, LIFO and Average Methods).	12	CO2	Chalk and Talk, PPT, quiz, on the spot test
III	**Management Accounting:** Meaning – Definition – Characteristics – Scope – Objectives and Functions – Advantages – Limitations – Management Accounting Vs Financial Accounting – Management Accounting Vs. Cost Accounting– Tools and Techniques of Management Accounting. Cash Flow Statement – Meaning – Importance – Advantages – Limitations – Preparation of Cash Flow Statements (As per Revised Accounting Standards) Simple Problems.	12	CO3	Chalk and Talk, PPT, quiz, on the spot test

IV	**Financial Statement Analysis:** Meaning – Importance and Limitations of Financial Statements – Techniques of Financial Statement Analysis – Comparative Statements– Common size statement – Trend Analysis (Theory Only)	12	CO4	Chalk and Talk, PPT, quiz, on the spot test
V	Meaning – Advantages – Limitations – Classifications and Computation of Ratios (Simple Problems)	12	CO5	Seminar, PPT presentation

Mrs.R.Boomadevi
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY						Class: II B.Sc.		
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	SEC4	23OUITSEC31	Enterprise Resource Planning	1	1	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔	✔	✔

Course Objectives:

1. To understand the basic concepts, Evolution and Benefits of ERP.

2. To know the need and Role of ERP in logical and Physical Integration.

3. Identify the important business functions provided by typical business software such as enterprise resource planning and customer relationship management

4. To train the students to develop the basic understanding of how ERP enriches the business organizations in achieving a multidimensional growth

5. To aim at preparing the students technological competitive and make them ready to self-upgrade with the higher technical skills

Course Content:

Unit I:

ERP Introduction, Benefits, Origin, Evolution and Structure: Conceptual Model of ERP, the Evolution of ERP, the Structure of ERP, Components and needs of ERP, Benefits & Limitations of ERP Packages.

Unit II:

Need to focus on Enterprise Integration/ERP; Information mapping; Role of common shared Enterprise database; System Integration, Logical vs. Physical System Integration, Benefits & limitations of System Integration, ERP's Role in Logical and Physical Integration. Business Process Reengineering, Data ware Housing, Data Mining, Online Analytic Processing (OLAP), Product Life Cycle Management (PLM), LAP, Supply chain Management.

Unit III:

ERP Marketplace and Marketplace Dynamics: Market Overview, Marketplace Dynamics, the Changing ERP Market. ERP- Functional Modules: Introduction, Functional Modules of ERP Software, Integration of ERP, Supply chain and Customer Relationship Applications.

Unit IV:

ERP Implementation Basics, , ERP implementation Strategy, ERP Implementation Life Cycle, Pre- Implementation task, Role of SDLC/SSAD, Object Oriented Architecture.

Unit V:

ERP & E-Commerce, Future Directives- in ERP, ERP and Internet, Critical success and failure factors, Integrating ERP into organizational culture. Using ERP tool: either SAP or ORACLE format to case study.

Text Book:

Enterprise Resource Planning – Alexis Leon, Tata McGraw Hill.

Reference Book(s)

1. Enterprise Resource Planning – Diversified by Alexis Leon, TMH.
2. Enterprise Resource Planning – Ravi Shankar & S. Jaiswal ,Galgotia

Websites and e-Learning resources

1. https://www.tutorialspoint.com/management_concepts/enterprise_resource_planning.htm
2. https://www.saponlinetutorials.com/what-is-erp-systems-enterprise-resource-planning/
3. https://www.guru99.com/erp-full-form.html
4. https://www.oracle.com/in/erp/what-is-erp/

Rationale for nature of Course:

➢ **Knowledge and Skill:** To make students aware of different components like MS Word, MS Excel and Power point.

➢ **Activities to be given:** Students shall be asked to digitally create, store, manipulate office information.

COURSE OUTCOMES:
At the end of the course, the student will be able to:

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Understand the basic concepts of ERP.	K1 to K3
CO2	Identify different technologies used in ERP	K1 to K4
CO3	Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules	K1 to K3
CO4	Discuss the benefits of ERP	K1 to K4
CO5	Apply different tools used in ERP	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (15 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	ERP Introduction, Benefits, Origin, Evolution and Structure: Conceptual Model of ERP, the Evolution of ERP, the Structure of ERP, Components and needs of ERP, Benefits & Limitations of ERP Packages..	3	CO1	Chalk and Talk, PPT, quiz, on the spot test
II	Need to focus on Enterprise Integration/ERP; Information mapping; Role of common shared Enterprise database; System Integration, Logical vs. Physical System Integration, Benefits & limitations of System Integration, ERP's Role in Logical and Physical Integration. Business Process Reengineering, Data ware Housing, Data Mining, Online Analytic Processing (OLAP), Product Life Cycle Management (PLM), LAP, Supply chain Management.	3	CO2	Chalk and Talk, PPT, quiz, on the spot test
III	**ERP Marketplace and Marketplace Dynamics**: Market Overview, Marketplace Dynamics, the Changing ERP Market. ERP-Functional Modules: Introduction, Functional Modules of ERP Software, Integration of ERP, Supply chain and Customer Relationship	3	CO3	Chalk and Talk, PPT, quiz, on the spot test

	Applications.			
IV	ERP Implementation Basics, , ERP implementation Strategy, ERP Implementation Life Cycle, Pre-Implementation task, Role of SDLC/SSAD, Object Oriented Architecture.	3	CO4	Chalk and Talk, PPT, quiz, on the spot test
V	ERP & E-Commerce, Future Directives- in ERP, ERP and Internet, Critical success and failure factors, Integrating ERP into organizational culture. Using ERP tool: either SAP or ORACLE format to case study.	3	CO5	PPT presentation.

Mrs.R.RajaSangeetha
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY						Class: II B.Sc.		
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	SEC5	23OUITSEC32P	PHP Scripting Lab	2	2	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔	✔	

Course Objectives:

1. To impact the knowledge in scripting.

2. To learn the functions and their method of calls.

3. To understand the form action.

4. To learn the file handling mechanism.

5. To design a web page and Database connectivity.

Programs List:

1. Write a PHP Program for Sum of Digits.

2. Write a PHP Program for Even Odd Program using Script and Form in PHP.

3. Write a PHP Program for Factorial Program using Script, Form and Recursion in PHP.

4. Write a PHP Program for Armstrong number using Script and Form in PHP.

5. Write a PHP Program for Palindrome Number using Script and Form in PHP.

6. Write a PHP Program for Fibonacci Series using Script and Recursive Function.

7. Write a PHP Program for Reversing Number using Script and String function in PHP.

8. Write a PHP Program for Area of Triangle using Script and Form.

9. Write a PHP Program for Leap Year Program using Script and Form.

10. Write a PHP Program for to print the alphabets in a triangle or in a pyramid form using

    o range() with for loop

    o chr() with for loop

    o range() with foreach loop

11. Write a PHP Program for Number Triangle.

12. Write a PHP Program for Parameterized Function.

13. Write a PHP Program for Call By Value and Call By Reference.

14. Write a PHP Program for PHP Form Handling using Get Form and POST Form.

15. Write a PHP Program for PHP File Handling.

PHP MySQL Connection:

16. Write a PHP Program in MySQL to Create Database.

17. Write a PHP Program in MySQL to Create Table.

18. Write a PHP Program in MySQL to Insert Record.

Text Books:

1. Mario Lurig. (2008). *PHP Reference: Beginner to Intermediate PHP5*. First Edition.

2. Robin Nixon. (2014). *Learning PHP, MySQL & JavaScript With jQuery, CSS & HTML5*. O'Reilly Media, Inc. Fourth Edition.

3. Luke Welling & Laura Thomson. (2016). *PHP and MySQL® Web Development.* Pearson Edu, Inc. Fifth Edition.

4. Steve Suehring. Tim Converse. & Joyce Park. (2009). *PHP 6 and MySQL.* Wiley Publishing, Inc.

Books for Reference

1. Adams, A. (2022). *PHP Programming-The Complete Guide*. Code Academy. First Edition.

2. Altaf Hussain. (2016). *Learning PHP 7 High Performance Paperback*. Packt Publishing Limited. Fourth Edition.

3. George Scholssnagle. (2004). *Advanced PHP Programming*. Sams Publishing. Kindle Edition.

4. Guy W. &Lecky Thompson. (2008).*Just Enough Web Programming with XHTML, PHP, and MySQL Paperback*. Delmar Cengage Learning. First Edition.

5. Jason Gilmore, W. (2010). *Beginning PHP and MySQL: From Novice to Professional*. A press. Inc. Fourth Edition.

Web Resources / E-Books

1. http://cdn.phpreferencebook.com/wp-content/uploads/2008/12/php_reference_-_beginner_to_intermediate_php5.pdf

2. https://github.com/manjunath5496/PHP-Programming-Books/blob/5b4c11bd5e45d75489a61859922b971c26145683/php(1).pdf

3. https://ptgmedia.pearsoncmg.com/images/9780321833891/samplepages/9780321833891.pdf

4. https://downloads.mysql.com/docs/apis-php-en.pdf

5. http://cs.petrsu.ru/~musen/php/2015/Books/PHP6%20and%20MySQL%20Bible%20b
   y%20Steve%20Suehring.pdf

6. http://minitorn.tlu.ee/~jaagup/kool/java/kursused/14/webpr/beginning_php_and_mysql
   _from_novice_to_professional_4th_edition.pdf

Nature of the course

- Developing logic and structured program, organizing data in software development.

Activities to be given

- Implement Programming
- Mini Projects

Activities on Employability Oriented

　　Software Development

　　Data Analysis

Pedagogy

Record Book writing, Program development and Demonstration, Practical sessions.

COURSE OUTCOMES:

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

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Demonstrate simple programs using PHP	K1 to K3
CO2	Apply the interface setup, styles & themes for the given application	K1 to K4
CO3	Analyze the problem and add necessary user interface components, multimedia Components and web data source into the application	K1 to K3
CO4	Evaluate the results by implementing the correct techniques on the web form	K1 to K4
CO5	Construct web applications with the facilitated components in PHP	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level　　　2- Intermediate Level　　　3- Advanced Level

LESSON PLAN: TOTAL HOURS (30 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	**PHP Programs:** 1. Write a PHP Program for Sum of Digits. 2. Write a PHP Program for Even Odd Program using Script and Form in PHP. 3. Write a PHP Program for Factorial Program using Script, Form and Recursion in PHP. 4. Write a PHP Program for Armstrong number using Script and Form in PHP.	6	CO1	Demo & Practical Session
II	5. Write a PHP Program for Palindrome Number using Script and Form in PHP. 6. Write a PHP Program for Fibonacci Series using Script and Recursive Function. 7. Write a PHP Program for Reversing Number using Script and String function in PHP. 8. Write a PHP Program for Area of Triangle using Script and Form.	6	CO2	Demo & Practical Session
III	9. Write a PHP Program for Leap Year Program using Script and Form. 10. Write a PHP Program for to print the alphabets in a triangle or in a pyramid form using. o range() with for loop o chr() with for loop o range() with for each loop 11. Write a PHP Program for Number Triangle.	6	CO3	Demo & Practical Session
IV	12. Write a PHP Program for Parameterized Function. 13. Write a PHP Program for Call By Value and Call By Reference.	6	CO4	Demo & Practical Session

	14. Write a PHP Program for PHP Form Handling using Get Form and POST Form.			
	15. Write a PHP Program for PHP File Handling.			
V	**PHP MySQL Connection:** 16. Write a PHP Program in MySQLto Create Database. 17. Write a PHP Program in MySQLto Create Table. 18. Write a PHP Program in MySQL to Insert Record.	6	CO5	Demo & Practical Session

Mrs.S.Sumathi
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY								Class: II B.Sc.
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	Part-IV	-	Environmental Studies (EVS)	-	1	-	-	-

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔		

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: II B.Sc.			
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
IV	Core	23OUIT41	.NET Programming	5	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔	✔	

Course Objectives:

1. To provide sufficient knowledge in developing web applications using ASP.NET
2. To manipulate data from SQL Server using Microsoft ADO.NET.
3. To Implement concepts such as arrays, strings and method overloading.
4. To Learn to create web applications using .NET.
5. To Explore ADO.NET and Entity Framework for database interactions.

Course Content:

Unit I:

   The Creation of C#: C# Relates to the .Net Framework - Common Language Runtime - Managed vs unmanaged code - An Overview of C#: Object-Oriented Programming - First Simple Program-Handling Syntax errors - Using code blocks-semicolon, positioning and Indentation-The C# Keywords-Identifiers-The .Net Framework Class Library-Data Types, Literals and Variables- Operators

Unit II:

   Program Control Statements: If Statement- switch Statement-For Loop- While loop do-while loop- for each loop-using break to exit a loop- using continue- go to- **Introducing Classes and objects:** Class Fundamentals- objects Creation-Methods-Constructors-Garbage Collection and Destructors-Exception Handling.

Unit III:

   Arrays and Strings: Arrays-Multidimensional Arrays-Jagged Arrays- for each loop Strings- Methods and classes: Method overloading- Main Method-Recursion-static Classes Delegates, Events and Lambda Expressions: Delegates -Lambda Expressions-LINQ

Unit IV:

   Developing ASP.NET Applications: Visual Studio: Creating Websites- The Anatomy of a Web Form – Web Form Fundamentals: Converting HTML Page to an ASP.Net Page – Page Class – Web Controls. State Management: View State - Transferring Information between Pages – Cookies – Session State – Application State.

Unit V:

Validation Controls – AdRotator Control. Working with Data: ADO.NET Fundamentals: – Direct Data Access – Disconnected Data Access - Data Binding: Data Binding with ADO.NET –Data Source Controls - The Data Controls: The GridView – Formatting the GridView

– Selecting GridView Row – Editing, Sorting and Paging the GridView-Generating Crystal Reports.

Text Books:

1. HerbertSchildt(2010),C#4.0,*TheCompleteReference*,TataMcGraw-HillPvtLtd

2. Mathew MacDonald, (2010), Beginning ASP.NET 4 in C# 2010, Second Edition, Apress.

3. K.V.K.Prasad,(2005) *Software TestingTools*,DreamTech.India,NewDelhi,

Reference Book(s)

1. Greg Buczek (2002), *ASP.NET – Developer_sguide*, Tata MaGraw Hill Publication

2. Jesse Liberty, (2002), *Programming C#,* 3.0‖, O_Reilly Press

3. J.Sharp (2009), ―Microsoft Visual C# 2008 Step by Step‖, PHI Learning Private Ltd.

4. Christian Nagel et al (2007) ,Professional C# 2005 with .NET 3.0‖, Wiley India,

Websites and e-Learning resources

1. http://ssw.jku.at/Teaching/Lectures/CSharp/Tutorial/

2. http://www.csharpkey.com/csharp/

3. http://www.w3schools.com/aspnet/default.asp

Rationale for nature of Course:

➢ **Knowledge and Skill:** To make students aware of different components like MS Word, MS Excel and Power point.

➢ **Activities to be given:** Students shall be asked to digitally create, store, manipulate office information.

COURSE OUTCOMES:
At the end of the course, the student will be able to:

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CO1	Outline the features of C# programming language and ASP.NET applications	K1 to K3
CO2	Demonstrate the salient properties of C# and ASP.NET applications	K1 to K4
CO3	Identify the various stages in developing web forms	K1 to K3

CO4	Select the appropriate controls to create a web form.	K1 to K4
CO5	Recommend a data driven web application by connecting to the data sources	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	3	2	3	3	2	2
CO2	3	3	3	3	2	2
CO3	3	3	3	2	2	3
CO4	3	3	3	3	3	2
CO5	3	3	2	3	2	2

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (75 Hrs.)

Unit	Course Content	Hrs.	Mode of Teaching
I	1 The Creation of C#: C# Relates to the .Net Framework - Common Language Runtime - Managed vs unmanaged code - An Overview of C#: Object-Oriented Programming - First Simple Program-Handling Syntax errors - Using code blocks-semicolon, positioning and Indentation-The C# Keywords-Identifiers-The .Net Framework Class Library-Data Types, Literals and Variables- Operators	15	Chalk and Talk, PPT
II	**Program Control Statements:** If Statement-switch Statement-For Loop- While loop do-while loop- for each loop-using break to exit a loop- using continue- go to- **Introducing Classes and objects:** Class Fundamentals- objects creation-Methods-constructors-Garbage Collection and Destructors-Exception Handling.	15	Chalk and Talk, PPT, quiz, on the spot test

III	**Arrays and Strings:** Arrays-Multidimensional Arrays-Jagged Arrays- for each loop Strings-Methods and classes: Method overloading- Main Method-Recursion-static Classes Delegates, Events and Lambda Expressions: Delegates - Lambda Expressions-LINQ	15	Chalk and Talk, PPT, quiz, on the spot test
IV	Developing ASP.NET Applications: Visual Studio: Creating Websites- The Anatomy of a Web Form – Web Form Fundamentals: Converting HTML Page to an ASP.Net Page – Page Class – Web Controls. State Management: View State - Transferring Information between Pages –Cookies – Session State – Application State.	15	Chalk and Talk, PPT, quiz, on the spot test
V	Validation Controls – AdRotator Control. Working with Data: **ADO.NET Fundamentals:** – Direct Data Access – Disconnected Data Access - Data Binding: Data Binding with ADO.NET –Data Source Controls - The Data Controls: The GridView – Formatting the GridView – Selecting GridView Row – Editing, Sorting and Paging the GridView-Generating Crystal Reports.	15	Seminar, PPT presentation

Mrs.R.Lakshmi
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: II B.Sc.			
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	Core Practical	23OUIT4P	.NET Programming Lab	5	3	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔	✔	

Course Objectives:

➢ Understand the basic syntax, data types, and control structures in C#, enabling students to write simple programs and perform basic operations.

➢ Gain proficiency in working with single-dimensional, multi-dimensional, and jagged arrays for data storage and manipulation.

➢ Develop an understanding of classes, objects, and encapsulation in C#.

➢ Implement method overloading to enhance code flexibility and maintainability.

➢ Learn to use LINQ (Language-Integrated Query) for querying collections and databases.

Programs List:

1. C# Basics

2. Looping Constructs

3. Arrays

4. Jagged Array

5. Strings

6. Classes and Objects

7. Method overloading

8. Delegates

9. LINQ

10. Lambda Expressions

Text Books:

➢ Mathew MacDonald, (2010), Beginning ASP.NET 4 in C# 2010, Second Edition, Apress.

➢ Jesse Liberty, (2002), ―Programming C#, 3.0‖, O'Reilly Press.

Books for Reference

- ➢ Herbert Schildt (2010), C# 4.0 The Complete Reference, Tata McGraw-Hill Pvt. Ltd.
- ➢ Greg Buczek (2002), ―ASP.NET – Developer 's guide‖, Tata McGraw Hill Publication.
- ➢ J.Sharp (2009), ―Microsoft Visual C# 2008 Step by Step‖, PHI Learning Private Ltd.
- ➢ Christian Nagel et al. , ―Professional C# 2005 with .NET 3.0‖, Wiley India, 2007.

Web Resources / E-Books

1. http://ssw.jku.at/Teaching/Lectures/CSharp/Tutorial/

2. http://www.csharpkey.com/csharp/

3. http://www.w3schools.com/aspnet/default.asp

Activities to be given

Implement Programming

Pedagogy

Record Book writing, Program development and Demonstration, Practical sessions.

COURSE OUTCOMES:

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

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Demonstrate MS Visual Studio.NET IDE to Create applications.	K1 to K3
CO2	Apply C# and ASP.NET concepts to design applications.	K1 to K4
CO3	Simplify the functionality of the web application in accordance to the user requirement.	K1 to K3
CO4	Evaluate the web application to fix the errors.	K1 to K4
CO5	Build a web application using C# and ASP.NET concepts to solve the problem.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (45 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	1. C# Basics 2. Looping Constructs	9	CO1	Demo & Practical Session
II	3. Arrays 4. Jagged Array	9	CO2	Demo & Practical Session
III	5. Strings 6. Classes and Objects	9	CO3	Demo & Practical Session
IV	7. Method overloading 8. Delegates	9	CO4	Demo & Practical Session
V	9. LINQ 10. Lambda Expressions	9	CO5	Demo & Practical Session

Mrs.S.Sumathi
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: II B.Sc.			
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
IV	(Elective) DSEC4	**23OUITDSE4A**	**IoT and its Applications**	3	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✔	✔	

Course Objectives:

1. Use of Devices, Gateways and Data Management in IoT.
2. Design IoT applications in different domain and be able to analyze their performance.
3. Implement basic IoT applications on embedded platform.
4. To gain knowledge on Industry Internet of Things.
5. To Learn about the privacy and Security issues in IoT.

Course Content:

UNIT – I:

IoT & Web Technology, The Internet of Things Today, Time for Convergence, Towards the IoT Universe, Internet of Things Vision, IoT Strategic Research and Innovation Directions, IoT Applications, Future Internet Technologies, Infrastructure, Networks and Communication, Processes, Data Management, Security, Privacy & Trust, Device Level Energy Issues, IoT Related Standardization, Recommendations on Research Topics.

UNIT - II

M2M to IoT – A Basic Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.

UNIT – III

IoT Architecture -State of the Art – Introduction, State of the art, Architecture. Reference Model- Introduction, Reference Model and architecture, IoT reference Model, IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views.

UNIT – IV

IoT Applications for Value Creations Introduction, IoT applications for industry: Future Factory Concepts, Brownfield IoT, Smart Objects, Smart Applications, Four Aspects in your Business to

Master IoT, Value Creation from Big Data and Serialization, IoT for Retailing Industry, IoT For Oil and GasIndustry, Opinions on IoT Application and Value for Industry, Home Management.

UNIT – V

Internet of Things Privacy, Security and Governance Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IoT-Data-Platforms for Smart Cities, First Steps Towards a Secure Platform, Smartie Approach. Data Aggregation for the IoT in Smart Cities, Security.

Text Book:

Vijay Madisetti and Arshdeep Bahga. (2014). *"Internet of Things: (A Hands-on Approach)"*. Universities Press (INDIA) Private Limited. 1st Edition.

Reference Book(s)

➢ Michael Miller, "The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities Are Changing the World", kindle version.

➢ Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", Apress Publications 2013, 1st Edition.

➢ WaltenegusDargie, ChristianPoellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice" 4..CunoPfister, "Getting Started with the Internet of Things", O"Reilly Media 2011.

Websites and e-Learning resources

https://www.simplilearn.com

https://www.javatpoint.com

https://www.w3schools.com

COURSE OUTCOMES:
At the end of the course, the student will be able to:

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Work with big data tools and its analysis techniques.	K1 to K3
CO2	Analyze data by utilizing clustering and classification algorithms.	K1 to K4
CO3	Learn and apply different mining algorithms and recommendation systems for large volumes of data.	K1 to K3
CO4	Perform analytics on data streams.	K1 to K4
CO5	Learn NoSQL databases and management.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	3	3	2	2
CO2	3	3	3	3	2	2
CO3	3	3	3	2	2	3
CO4	3	3	3	3	3	2
CO5	3	3	2	3	2	2

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (75 Hrs.)

Unit	CourseContent	Hrs.	Mode of Teaching
I	IoT & Web Technology, The Internet of Things Today, Time for Convergence, Towards the IoT Universe, Internet of Things Vision, IoT Strategic Research and Innovation Directions, IoT Applications, Future Internet Technologies, Infrastructure, Networks and Communication, Processes, Data Management, Security, Privacy & Trust, Device Level Energy Issues, IoT Related Standardization, Recommendations on Research Topics.	15	
II	M2M to IoT – A Basic Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.	15	

III	IoT Architecture -State of the Art – Introduction, State of the art, Architecture. Reference Model- Introduction, Reference Model and architecture, IoT reference Model, IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views	15	
IV	IoT Applications for Value Creations Introduction, IoT applications for industry: Future Factory Concepts, Brownfield IoT, Smart Objects, Smart Applications, Four Aspects in your Business to Master IoT, Value Creation from Big Data and Serialization, IoT for Retailing Industry, IoT For Oil and GasIndustry, Opinions on IoT Application and Value for Industry, Home Management	15	
V	Internet of Things Privacy, Security and Governance Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IoT-Data-Platforms for Smart Cities, First Steps Towards a Secure Platform, Smartie Approach. Data Aggregation for the IoT in Smart Cities, Security.	15	

Mrs.G.Amudha
Course Designer

	DEPARTMENT OF INFORMATION TECHNOLOGY				Class: II B.Sc.			
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
III	SEC6	23OUITSEC4P	Web Designing Lab	2	2	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔	✔	

Course Objectives:

1. Understand the basics of HTML and its components.
2. To study about the Graphics in HTML.
3. Understand and apply the concepts of XML and DHTML.
4. Understand the concept of JavaScript.
5. To identify and understand the goals and objectives of the Ajax.

Course Content:

UNIT – I:

HTML: HTML-Introduction-tag basics- page structure-adding comments working with texts, paragraphs and line break. Emphasizing test- heading and horizontal rules-list-font size, face and color-alignment links-tables-frames.

UNIT – II:

Forms & Images Using Html: Graphics: Introduction-How to work efficiently with images in web pages, image maps, GIF animation, adding multimedia, data collection with html forms textbox, password, list box, combo box, text area, tools for building web page front page.

UNIT – III:

XML & DHTML: Cascading style sheet (CSS)-what is CSS-Why we use CSS-adding CSS to your web pages-Grouping styles-extensible markup language (XML).

UNIT – IV:

Dynamic HTML: Document object model (DCOM)-Accessing HTML & CSS through DCOM Dynamic content styles & positioning-Event bubbling-data binding.
JavaScript: Client-side scripting, What is JavaScript, How to develop JavaScript, simple JavaScript, variables, functions, conditions, loops and repetition.

UNIT – V:

Advance script, JavaScript and objects, JavaScript own objects, the DOM and web browser environments, forms and validations.

Text Books:
- ➤ Pankaj Sharma, "Web Technology", SkKataria& Sons Bangalore 2011.
- ➤ Mike Mcgrath, "Java Script", Dream Tech Press 2006, 1st Edition.
- ➤ Achyut S Godbole&AtulKahate, "Web Technologies", 2002, 2nd Edition.

Books for Reference
- ➤ Laura Lemay, RafeColburn , Jennifer Kyrnin, "Mastering HTML, CSS &Javascript Web Publishing", 2016.
- ➤ DT Editorial Services (Author), "HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)", Paperback 2016, 2nd Edition.

Web Resources / E-Books
- ➤ NPTEL & MOOC courses titled Web Design and Development.
- ➤ https://www.geeksforgeeks.org

Activities to be given

Implement Programming

Pedagogy

Record Book writing,Program development and Demonstration, Practical sessions.

COURSE OUTCOMES:

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

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Develop working knowledge of HTML.	K1 to K3
CO2	Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).	K1 to K4
CO3	Ability to optimize page styles and layout with Cascading Style Sheets (CSS).	K1 to K3
CO4	Ability to develop a java script.	K1 to K4
CO5	An ability to develop web application using Ajax.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	1	2	3	2
CLO2	3	1	1	1	3	2
CLO3	3	1	1	1	3	2
CLO4	3	1	2	3	3	2
CLO5	3	2	1	2	2	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (30 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	HTML: HTML-Introduction-tag basics- page structure-adding comments working with texts, paragraphs and line break. Emphasizing test-heading and horizontal rules-list-font size, face and color-alignment links-tables-frames.	6	CO1	Demo & Practical Session
II	Forms & Images Using Html: Graphics: Introduction-How to work efficiently with images in web pages, image maps, GIF animation, adding multimedia, data collection with html forms textbox, password, list box, combo box, text area, tools for building web page front page.	6	CO2	Demo & Practical Session
III	XML & DHTML: Cascading style sheet (CSS)-what is CSS-Why we use CSS-adding CSS to your web pages-Grouping styles-extensible markup language (XML).	6	CO3	Demo & Practical Session
IV	Dynamic HTML: Document object model (DCOM)-Accessing HTML & CSS through DCOM Dynamic content styles & Positioning-Event bubbling-data binding. JavaScript: Client-side scripting, what is JavaScript, how to develop JavaScript, simple	6	CO4	Demo & Practical Session

	JavaScript, variables, functions, conditions, loops and repetition.			
V	Advance script, JavaScript and objects, JavaScript own objects, the DOM and web browser environments, forms and validations.	6	CO5	Demo & Practical Session

Mrs.R.Rajasangeetha
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: II B.Sc.			
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
IV	SEC7	23OUITSEC42	**Human Computer Interaction**	2	2	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✔	✔	

Course Objectives:

1. To learn about the foundations of Human Computer Interaction.
2. To learn the design and software process technologies.
3. To learn HCI models and theories.
4. To learn Mobile Ecosystem.
5. To learn the various types of Web Interface Design.

Course Content:

Unit I:

FOUNDATIONS OF HCI:

- The Human: I/O channels – Memory
- Reasoning and problem solving; The Computer: Devices – Memory – processing and networks;

Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms. - Case Studies

Unit II:

DESIGN & SOFTWARE PROCESS:

- Interactive Design:
- Basics – process – scenarios
- Navigation: screen design Iteration and prototyping.
- HCI in software process:

Software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules: principles, standards, guidelines, rules. Evaluation Techniques – Universal Design

Unit III:

MODELS AND THEORIES:

HCI Models: Cognitive models: - Socio-Organizational issues and stakeholder requirements Communication and collaboration Models-Hypertext, Multimedia and WWW.

Unit IV:

Mobile HCI:

- Mobile Ecosystem: Platforms, Application frameworks
- Types of Mobile Applications: Widgets, Applications, Games
- Mobile Information Architecture, Mobile 2.0,
- Mobile Design: Elements of Mobile Design, Tools. - Case Studies

Unit V:

WEB INTERFACE DESIGN: Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow - Case Studies

Text Books:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, "Human -Computer Interaction‖", III Edition, Pearson Education, 2004 (UNIT I, II & III)

2. Brian Fling, ―"Mobile Design and Development", I Edition, O'Reilly Media Inc., 2009(UNIT–IV)

3. Bill Scott and Theresa Neil, ―Designing Web Interfaces‖, First Edition, O'Reilly, 2009. (UNIT-V)

Reference Book(s)

1. Shneiderman, "*Designing the User Interface: Strategies for Effective Human-Computer Interaction"*, V Edition, Pearson Education.

Websites and e-Learning resources

1. https://www.interaction-design.org/literature/topics/human-computer-interaction

2. https://link.springer.com/10.1007/978-0-387-39940-9_192

3. https://en.wikipedia.org/wiki/Human%E2%80%93computer_interaction

Rationale for nature of Course:

- ➢ **Knowledge and Skill:** To make students developing well-designed, efficient, and testable code. Conducting software analysis, programming, testing, and debugging.

- ➢ **Activities to be given:** Student to be   designing, building and maintaining Java-based applications & websites.

COURSE OUTCOMES:

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

COs	CLO Statement	Knowledge According to Bloom's Taxonomy (Upto K level)
CO1	Understand the fundamentals of HCI.	K1 to K3
CO2	Understand the design and software process technologies.	K1 to K4
CO3	Understand HCI models and theories.	K1 to K3
CO4	Understand Mobile Ecosystem, types of Mobile Applications, mobile Architecture and design.	K1 to K4
CO5	Understand the various types of Web Interface Design.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	2	2	2
CO2	2	3	2	2	2	2
CO3	2	3	3	3	2	2
CO4	2	3	2	2	2	2
CO5	3	3	2	2	2	2

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (30 Hrs.)

UNIT	Details	No. of Hours	Course Objectives	Mode of Teaching
I	**FOUNDATIONS OF HCI :** • The Human: I/O channels – Memory • Reasoning and problem solving; The Computer: Devices – Memory – processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms. - Case Studies	6	CO1	Chalk and Talk, PPT

II	**DESIGN & SOFTWARE PROCESS:** • Interactive Design: • Basics – process – scenarios • Navigation: screen design Iteration and prototyping. • HCI in software process: Software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules: principles, standards, guidelines, rules. Evaluation Techniques – Universal Design	6	CO2	Chalk and Talk, PPT, quiz, on the spot test
III	**MODELS AND THEORIES:** HCI Models : Cognitive models:- Socio-Organizational issues and stakeholder requirements Communication and collaboration models-Hypertext, Multimedia and WWW.	6	CO3	Chalk and Talk, PPT, quiz, on the spot test
IV	**Mobile HCI:** • Mobile Ecosystem: Platforms, Application frameworks • Types of Mobile Applications: Widgets, Applications, Games • Mobile Information Architecture, Mobile 2.0, • Mobile Design: Elements of Mobile Design, Tools. - Case Studies	6	CO4	Chalk and Talk, PPT, quiz, on the spot test
V	**WEB INTERFACE DESIGN:** Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow - Case Studies	6	CO5	Seminar, PPT presentation

Mrs.G.Amudha
Course Designer

DEPARTMENT OF INFORMATION TECHNOLOGY						Class: II B.Sc.		
Sem.	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
IV	Part-IV	23OU4EV4	Environmental Studies (EVS)	2	1	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔		

EVALUATION (PRACTICAL)

Internal (Formative)   : 40 marks
External (Summative) : 60 marks
Total   : 100 marks

Question Paper Pattern for Internal Practical Examination:40Marks

S. No	Components	Marks
1.	I– Major question	15
2.	II-Minor question	08
3.	III-Spotter(4x 3)	12
4.	IV–Record book	05
Total		**40**

QuestionPaperPatternforExternalPracticalExamination(Major):60Marks

S. No	Components	Marks
1.	I– Major question	20
2.	II-Minor question	15
3.	III-Spotter(4x5)	20
4.	IV–Record book	05
Total		**60**

In respect of external examinations passing minimum is **35% for Under Graduate Courses** and in total, **aggregate of 40%.**

Latest amendments and revisions as per **UGC** and **TANSCHE** nor mistaken into consideration to suit the changing trends in the curriculum.