

SEMESTER –III

CODE	COURSE TITLE
18CMUC306	DATABASE MANAGEMENT SYSTEM

Category	CIA	ESE	L	T	P	Credit
Core	25	75	72	3	-	4

Preamble

- ❖ On successful completion of the course the students should understand the Architectural Concept, Structural Embedded SQL, Hierarchical Approach and Network Concept.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the basic concepts and the applications of database system.	K1,K2
CO2	Familiarize the relational database theory and formulate the relational algebra expressions for queries.	K2
CO3	Identify the embedded SQL and apply knowledge to the normalization of a database.	K4
CO4	Apply the tree structured relationship in hierarchical model.	K3
CO5	Familiarize the concept of database task group system.	K2

Mapping with Programme Outcomes

CO_s	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	M	S	M	S
CO3	S	S	M	S	M
CO4	S	S	S	M	S
CO5	S	M	S	M	S

S-Strong; M-Medium

Syllabus

UNIT I

(12 Hrs.)

Database System Architecture Basic Concepts: Data System, Operational data, data independence – **Architecture for a Database System**, Distributed Database. Data structures and Corresponding Operators: Introduction, Relational Approach, Hierarchical approach, Network Approach.

UNIT II

(12 Hrs.)

Relational Approach: Relational Data Structure, Relation, Domain, Attributes, Keys, Relational Algebra: Introduction, Traditional Set Operation - **Set Operation**. Attribute names for Derived Relations, Special Relational Operations.

UNIT III

(12 Hrs.)

Embedded SQL: Introduction - Operations Not Involving Cursors - Dynamic statements Query by example - Retrieval operations, built in-functions, update operation, QBE Dictionary. Normalization: Functional dependency first, second, third normal forms, relations with more than one candidate key, good and bad decomposition.

UNIT IV

(12 Hrs.)

Hierarchical Approach: IMS data structure, Physical Database, database description. Hierarchical sequence external levels of IMS: Logical databases, the program communication block. IMS data Manipulation: Defining the program communication block: DL/I examples.

UNIT V

(12 Hrs.)

Network Approach: **Architecture of DBTG system, DBTG Data Structure**; the set construct, singular sets, sample schema, the external level of DBTG-DBTG data manipulation.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Date.C.J,	An Introduction to database Systems	Narosa Publishing House, New Delhi	2002, 3 rd edition.

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Abraham Silberschatz Henry F Korth	Database Systems Concepts	Tata McGraw Hill Companies, New York	2011, 6 th Edition.
2.	Bipin C. Desai	An Introduction to Database System	Galgotia Publications Pvt. Ltd., New Delhi	2002, 1 st edition.
3.	Pannerselvam.R. B.	Database Management System	Prentice- Hall of India, New Delhi	2003

Web Resources

- <https://searchsqlserver.techtarget.com/definition/database-management-system>
- <https://www.geeksforgeeks.org/database-management-system-introduction-set-1/>
- <http://codex.cs.yale.edu/avi/db-book/db4/slide-dir/ch1-2.pdf>
- <https://www.tutorialspoint.com/dbms/>

Pedagogy

- Lecture, PPT, Assignment, Seminar

SEMESTER III

CODE	COURSE TITLE
18CMUA303	ENTERPRISE RESOURCE PLANNING

Category	CIA	ESE	L	T	P	Credit
Allied - III	25	75	72	3	-	5

Preamble

- ❖ To acquire knowledge about Enterprise Resource Planning in the Business Concern, disseminate over ERP system and decision support system practiced in Business Concern.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	To generalize the fundamental principles, concepts and tools used in ERP	K1&K2
CO2	Identify and describe typical functionality in an ERP system.	K2&K3
CO3	Apply key technical terminology for ERP development.	K3
CO4	Understand the concepts of reengineering and its applications to ERP system.	K2
CO5	Implement the various modules to meet the emerging needs of business.	K3

Mapping with Programme Outcomes

CO _s	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	M	M	M	M
CO3	S	S	S	M	M
CO4	S	M	S	M	M
CO5	S	S	S	S	S

S-Strong; M-Medium

Syllabus

UNIT – I

(15 Hrs.)

Introduction to ERP- Conceptual Model of ERP- Evolution of ERP- Structure of ERP- Reasons for Growth- Advantages of ERP- Enterprise an overview.

UNIT – II

(15 Hrs.)

Related technologies: Business process Re-Engineering- Management Information System- Decision Support System- Exclusive Information System- Data warehousing- Data Mining- OLAP- Supply Chain Management.

UNIT – III

(15 Hrs.)

ERP- Manufacturing perspective- Materials Requirement Planning- Distribution Requirements Planning- JIT- CAD/CAM- Product Data Management.

UNIT – IV

(15 Hrs.)

ERP Implementation Life cycle: Introduction- Pre- evaluation screening- Project Planning- Gap Analysis- Re-engineering- Configuration-Implementation.

UNIT – V

(15 Hrs.)

Future directions in ERP: New markets- New Channels- Faster implementation Methodologies- Business Models.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Alexis Leon	Enterprise Resource Planning - Theory and Practice	Tata McGraw Hill Publishing company Ltd, New Delhi	2 nd Edition,2008

Reference Books

S.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Rahul V.Altekar	Enterprise wide Resource Planning Theory and practice	Prentice Hall of India, New Delhi	Edition,2004.
2.	Vinod Kumar Garg & Venkitakrishnan .N.K	Enterprise Resource Planning : Concepts and Practice	Prentice Hall of India, New Delhi	2 nd Edition, 2004
3.	Rajesh Ray	Enterprise Resource Planning – Text and cases	Tata McGraw Hill Publishing company Ltd, New Delhi	2011

Web Resources

- https://www.caniaserp.com/blog/do-you-need-to-shift-to-an-erp-system-today-find-out-now?gclid=CjwKCAjw96fkBRA2EiwAKZjFTYJtZp4gfa1jwIkpqH2KFawthxaWEsIGVwP9KR1dViyv-pLQYd47BxoCoLIQAvD_BwE
- <https://solutiondots.com/blog/erp-cloud/brief-introduction-enterprise-resource-planning-erp/>
- https://www.tutorialspoint.com/sap/sap_introduction.html

Pedagogy

- Lecture, PPT, Assignment, Seminar

SEMESTER-IV

CODE	COURSE TITLE
18CMUC408	OBJECT ORIENTED PROGRAMMING WITH C++

Category	CIA	ESE	L	T	P	Credit
Core	25	75	72	3	-	4

Preamble

- ❖ Getting in-depth knowledge of object-oriented programming principles and techniques to enhance the programming skills of the students. The students are provided with the knowledge of pointers, exception handling and file operation.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Identify the basic concepts of object oriented programming.	K ₄
CO2	Recognize the abstract idea of function overloading, operator overloading, virtual functions and polymorphism.	K ₄
CO3	Gain knowledge about classes and objects for the real time problems and differentiate Constructors and Destructors.	K ₁ & K ₂
CO4	Demonstrate the code reusability, operator overloading and conversions.	K ₂
CO5	Understand about virtual functions and pointers to implement dynamic binding with polymorphism.	K ₂

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	M
CO2	M	S	M	S	S
CO3	M	S	S	S	M
CO4	S	S	M	S	S
CO5	M	M	S	M	L

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(12 hrs.)

Principles of Object Oriented Programming – A Look at Procedure and Object Oriented Programming Paradigm – Basic Concepts of Objects Oriented Programming – Benefits of OOP – Object Oriented Languages –Application of OOP – Beginning with C++ – What is C++ – Application of C++-C++ Statements – Structure of C++ Program.

UNIT II

(12 hrs.)

Tokens, Expressions and Control Structures – Tokens – Keywords – Identifiers– Basic and User Defined Data Types – Operators in C++ – Operator Overloading – Operator Precedence – Control Structures. Function in C++ – The Main Function – Function Prototyping – Call by Reference – Return by Reference – Inline – Function Overloading – Friend and Virtual Functions.

UNIT III

(12 hrs.)

Classes and Objects – Introduction – Specifying a Class – Defining a Member Function – Static Data Member – Arrays of Objects – Objects as Function Arguments – Friendly Function – Pointers to Members. Constructors and Destructors – Constructors – Copy Constructors – Dynamic Constructors – Constructing Two –Dimensional Arrays Destructors.

UNIT IV

(12 hrs.)

Operator Overloading – Type Conversions – Introduction – Defining Operator Overloading – Overloading: Unary and Binary Operators – Overloading Binary Operators using Friends – Manipulation of String using Operators – Rules for Overloading Operators – Types Conversions – Inheritance – Extending Classes – Defining Derived classes – Single Multilevel, Multiple, Hierarchical and Hybrid Inheritance – Virtual Base Classes – Abstract Classes.

UNIT V

(12 hrs.)

Pointers and Virtual Functions – Pointers to Objects – Pointers to Derived Classes – Virtual Functions. Working with Files – Classes for File Stream Operations – Opening and Closing of a File – File Pointers and their Manipulation – Sequential I/O Operations.

Text Books

Sl.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Balagurusamy.E	Object Oriented Programming with C++	Tata McGraw Hill Publishing Co, Ltd., New Delhi	1 st edition, 2013.

Reference Books

Sl.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Herbert Schildit	C++ The complete reference	Tata McGraw Hill Publishing Co., Ltd., New Delhi	4 th edition, 2008
2.	Dr. Ravichandram	Programming With C++	Tata McGraw Hill Publishing Co., Ltd., New Delhi	2 nd edition, 2006
3.	Venugopal. K.R, Rajkumar, Ravishankar. T	Mastering C++,	Tata McGraw Hill Publishing Co, Ltd., New Delhi	1 st edition, 2007

Web Resources

1. <https://www.geeksforgeeks.org/basic-concepts-of-object-oriented-programming-using-c/>
2. <https://www.includehelp.com/cpp-tutorial/cpp-tokens-cpp-programming-language-tutorials.aspx>
3. <https://www.programiz.com/cpp-programming/object-class>
4. https://www.tutorialspoint.com/cplusplus/cpp_overloading.htm
5. <https://www.w3schools.in/cplusplus-tutorial/virtual-function/>

Pedagogy

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