DATABASE MANAGEMENT SYSTEMS
(GIE-321)

Contact Hours		Credit Hours	
Theory	= 32	Theory	= 2
Practical	= 48	Practical	= 1
Total	= 80	Total	= 3

1. Course Objectives. This course is aimed at providing the students with the background to design, implement, and use database management systems. Course gives both theoretical and practical knowledge of relational databases.

2. Course Outcomes. Students are expected to have an in depth understanding of database concepts. The students will be able to design and implement a database management system using any relational database management system.

3. Course outline
   - a. Part-I Introduction
     - (1) Introduction to databases.
     - (2) Introduction to ER (Entity-Relationship) Modeling.
     - (3) Normalization.
   - b. Part-II Relational Model
     - (1) Relational Model.
     - (2) Relational Algebra.
     - (3) Relational Calculus.
   - c. Part-III Structured Query Language
     - (1) Query Languages: SQL.
     - (2) Design of Relational databases.
     - (3) Schema Refinement.
   - d. Part-IV Database Management (Advance Topics)
     - (1) Physical database design and implement
     - (2) Indexing and sorting
     - (3) Query process
   - e. Advance database topics
     - (1) Distributed Database
     - (2) Object Oriented DBMS
     - (3) Document Oriented DBMS
     - (4) Spatial and Spatio-Temporal DBMS
     - (5) Data mining and data warehousing

4. **Text Book**. Modern Database Management, 11th edition, Prentice Hall, ISBN: 10:0136088392

5. **Reference Books**

a. M. Kifer, A. Bernstein, and P.M. Lewis Database Systems, An application oriented approach, second edition, Addison-Wesley, 2005, ISBN: 0-321-26845-8.
b. R. Elmasri and S. Navathe, Fundamentals of Database Systems, 6th Edition, Addison-Wesley, 2011. ISBN: 0136086209
c Database management systems, by Raghu Ramakrishna, 3rd edition McGraw Hill, ISBN Number 0-07-246563-8