## <span style="color:red">Updated</span> Syllabus for 1st Internal Exam of 1st Semester, M.Sc.(CS/IT) for the subject Advanced Database Management System (CSC1056/INF1056)

**Unit-1**: Definition of database, data and information, meta data, various types of DBMS, DBMS properties, Advantages of DBMS over File processing System, Actors in DBMS, Users of DBMS, Advantages of DBMS, Data Abstraction, Data Models (High Level/ /Low Level), ER-Data Model, Relational Data Model, Network Data Model, Hierarchical Data Model, Schema, Three Level Schema Architecture of DBMS, Data Independence, Components of a DBMS

**Unit-II**: Database Languages(DDL, DML, TCL, DCL), Basic concepts of Relational Data Model, Types of Constraints in Relational Model, various types of Keys in DBMS, Relational Algebra, Types of Relational Algebra Expression, SELECT (Sigma), PROJECT (Pi) and RENAME (rho) operation, UNION, INTERECTION, DIFFERENCE,CARTESIAN operation, JOIN operations (Inner Joins and Outer Joins), INNER JOIN (THETA, NATURAL, EQUI),OUTER JOIN (LEFT, RIGHT, FULL,DIVISON, Extended Relational Operators (Extended Projections, Aggregate Functions, viz., Count(),Max(), Min(), Avg(), Sum()), Relational Calculus (Tuple Relational Calculus, Domain Relational Calculus), Query Tree

Dwipen Laskar
Assistant Professor, Dept. of Comp. Sc.
Gauhati University