2-YEAR M. TECH.
IN
COMPUTER SCIENCE & ENGINEERING

I SEMESTER M.TECH-CSE					
Course No.	**Name of the Courses**	**L**	**T**	**P**	**Credit Hours**
CSC501	Advanced Data Structures & Algorithms	3	0	0	**9**
CSC505	High Performance Computer Architecture	3	0	0	**9**
CSC503	Algorithmic Graph Theory	3	0	0	**9**
CSC504	Computing Techniques & Mathematical Tools	3	0	0	**9**
CSC502	Advanced DBMS	3	0	0	9
CSC506	Advanced Data Structures & Algorithms Laboratory	0	0	2	**2**
CSC507	Computing Techniques & Mathematical Tools Laboratory	0	0	2	**2**
Total					**49**
Contact Hrs.		**15**	**00**	**04**	**19**

CSC502	Advanced DBMS	3-0-0

Relational Databases: Integrity Constraints, Functional Dependency, Multi-valued Dependency.

Query Processing and Optimization: Evaluation of Relational Operations, Transformation of Relational Expressions, Indexing and Query Optimization, Data access from disk, Index based access, Sort and Join Processing, Physical plan selection, Limitations of Relational Data Model.

Parallel and Distributed Databases: Distributed Data Storage, Fragmentation & Replication, Location and Fragment Transparency. Distributed Query Processing and Optimization, Distributed Transaction Modeling and Concurrency Control, Distributed Deadlock, Commit Protocols, Design of Parallel Databases, Parallel Query Evaluation.

Advanced Transaction Processing: Nested and Multilevel Transactions, Compensating Transactions and Saga, Long Duration Transactions, Weak Levels of Consistency, Transaction Work Flows, Transaction Processing Monitors.

Objected Oriented and Object Relational Databases: Modeling Complex Data Semantics, Specialization, Generalization, Aggregation and Association, Objects, Object

Identity, Equality and Object Reference, Architecture of Object Oriented and Object Relational Databases.

NoSQL databases: Cassandra, MongoDB, etc.,