NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF COMPUTER APPLICATIONS

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech (DBMS)		
Course Title	DATABASE MANAGEMENT SYSTEM		
Course Code	CAMI13	No. of Credits	3
Course Code of Pre-requisite subject(s)			
Session	Jan 2023	Section (if, applicable)	
Name of Faculty	Mr. VISHNU CHANDRABANSHI	Department	Computer Applications
Email	405121056@nitt.edu	Telephone No.	9667638765
Name of PAC Chairperson	Dr. Michael Arock		
E-mail	michael@nitt.edu	Telephone No.	91-431-2503736
Course Type	✓ Minor course	☐ Elective course	

Syllabus (approved in BoS)

File System versus DBMS – Advantages – Database Languages.ER-Model: Entities – Relationships – Additional Features of ER Model – Conceptual Design with ER Model

Relational Model – Keys - Constraints – Querying – Views - Relational Algebra – Relational Calculus – SQL

File Organization-Fixed Length records-Variable length records – Organization of records in files – Sequential –Clustering.

Indexing – Ordered Indices - B + Tree Index files – Hashing- Static Hashing-Dynamic hashing.

Database Design – Pitfalls in Relational Database Design – Functional Dependencies – Decomposition – Normalization – I to V Normal Forms

References:

1. Raghu Ramakrishnan and Johannes Gehrke, "Data Base Management Systems", 3rd Edition, McGraw-Hill, 2003.
2. Silberschatz, Korth and Sudarshan, "Data Base System Concepts", McGraw-Hill, 6th Edition, 2010.
3. C. J. Date, "An Introduction to Database Systems", 8th Edition, Addison-Wesley, 2003.
4. R. Elmasri, S.B. Navathe, "Fundamentals of Database Systems", 5thEdition, Pearson Education/Addison Wesley, 2007.

COURSE OBJECTIVES

To learn different database models and design of databases and to study query languages.

Mapping of COs with POs

Course Outcomes The students will be able to:	**Programme Outcomes (PO)** (Enter Numbers only)
• Design ER Diagram, Conceptual Diagram for the given problem.	1,2,3,4,5
• Create database & perform operation to solve real-time problems.	1,2,3,4,5

COURSE PLAN – PART II

COURSE OVERVIEW

This course covers database management system topics. Part I Describes about DBMS, File System, ER Model, Keys, Constraints, Relational Algebra, Relational Calculus, SQL ; Part II Describes File Organization, Indexing, B+-trees, Hashing, Database Design, Pitfalls in Relational Database Design, Functional Dependencies, Decomposition, Normalization concepts.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week1 / 3hrs	Introduction to DBMS, File System versus DBMS, Advantages, Database Languages	Online – Power point presentation / Black Board
2	Week 2 / 3hrs	ER-Model: Entities – Relationships – Additional Features of ER Model –	-do-
3	Week 3 / 3hrs	Conceptual Design with ER Model- Relational Model	-do-
4	Week 4 / 3hrs	Key Constraints- Querying – Views - Relational Algebra	-do-

5	Week 5 / 3hrs	Relational Calculus , SQL	-do-
6	Week 6 / 3hrs	File Organization- Fixed Length records- Variable length records - Organization of records in files	-do-
7	Week 7 / 3hrs	Indexing - Organization of records in files – Sequential –Clustering	-do-
8	Week 8 / 4hrs	Ordered Indices- B + Tree Index files	-do-
9	Week 9 / 3hrs	Hashing- Static Hashing-Dynamic hashing.	-do-
10	Week 10 / 3hrs	Database Design – Pitfalls in Relational Database Design	-do-
11	Week 11 / 3hrs	Functional Dependencies – Decomposition – Normalization – I to V Normal Forms	-do-

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Cycle test1	Week 5	1 Hr	20
2	Cycle test2	Week 9	1 Hr	20
3	Assignment	Week11	-	10
4	Compensation Assessment	---------	1 Hr	--------
5	Final Assessment	At the end of course	3 hrs	50

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

- The students through the class representative may give their feedback at any time to the course faculty which will be duly addressed.
- The students may also give their feedback during Class Committee meeting.

COURSE POLICY (including compensation assessment to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)

The students can get the availability of faculty member over phone and email. They can get their doubts clarified at any time with their faculty member with prior appointment.

COMPENSATION ASSESSMENT

One compensation assessment for absentees in assessments (other than final assessment) is

mandatory. Only genuine cases of absence shall be considered.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- **At least 75% attendance in each course is mandatory.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION

FOR APPROVAL

Course Faculty **CC-Chairperson** **HOD**