

1. Name of the Faculty:		Course Code: CSEG 7001
2. Course	:Database Management Systems	L: 36
3. Program	: MCA	T: 0
4. Target	:	P: 0
		C: 3

COURSE PLAN

Target	50% (marks)
Level-1	40% (population)
Level-2	50% (population)
Level-3	60% (population)

1. Method of Evaluation

UG	PG
Quizzes/Tests, Assignments (30%)	Quizzes/Tests, Assignments, seminar (50%)
Mid Examination (20%)	End semester (50%)
End examination (50%)	

2. Passing Criteria

Scale	PG	UG
Out of 10 point scale	SGPA – “6.00” in each semester CGPA – “6.00” Min. Individual Course Grade – “C” Course Grade Point – “4.0”	SGPA – “5.0” in each semester CGPA – “5.0” Min. Individual Course Grade – “C” Course Grade Point – “4.0”

*for PG, passing marks are 40/100 in a paper

*for UG, passing marks are 35/100 in a paper

3. Pedagogy

- Presentations
- Flipped Classroom sessions
- Think-Pair-Share Activities
- Video Lectures
- Class Test
- Quiz
- Assignments
- Concept diary (needs to be maintained by students-short and concise notes which include course concepts that he/she has understood.)

4. References:

Text Books	Web resources	Journals	Reference books
1. Fundamentals of Database systems, fourth edition, by Ramez Elmasri and	Refer to the Web-links/Resources in Blackboard		1. Database System Concepts by Avi Silberschatz, Henry F. Korth, S. Sudarshan

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Shamkant b. Navathe, Pearson Education. 2. SQL, PL/SQL The programming language of Oracle, III- edition, Ivan Bayross			2. Introduction to Database systems by Bipin Desai 3. Database Management Systems by C.J Date 4. Database Management System by Ramakrishnan
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GUIDELINES TO STUDY THE SUBJECT

Instructions to Students:

1. Go through the 'Syllabus' in the Black Board section of the web-site(<https://learn.upes.ac.in>) in order to find out the Reading List.
2. Get your schedule and try to pace your studies as close to the timeline as possible.
3. Get your on-line lecture notes (Content, videos) at Lecture Notes section. These are our lecture notes. Make sure you use them during this course.
4. Check your blackboard regularly
5. Go through study material
6. Check mails and announcements on blackboard
7. Keep updated with the posts, assignments and examinations which shall be conducted on the blackboard
8. Be regular, so that you do not suffer in any way
9. **Cell Phones and other Electronic Communication Devices:** Cell phones and other electronic communication devices (such as Blackberries/Laptops) are not permitted in classes during Tests or the Mid/Final Examination. Such devices MUST be turned off in the class room.
10. **E-Mail and online learning tool:** Each student in the class should have an e-mail id and a pass word to access the LMS system regularly. Regularly, important information – Date of conducting class tests, guest lectures, via online learning tool. The best way to arrange meetings with us or ask specific questions is by email and prior appointment. All the assignments preferably should be uploaded on online learning tool. Various research papers/reference material will be mailed/uploaded on online learning platform time to time.
11. **Attendance:** Students are required to have minimum attendance of 75% in each subject. Students with less than said percentage shall NOT be allowed to appear in the end semester examination.

This much should be enough to get you organized and on your way to having a great semester! If you need us for anything, send your feedback through e-mail [to your concerned faculty](#). Please use an appropriate subject line to indicate your message details.

There will no doubt be many more activities in the coming weeks. So, to keep up to date with all the latest developments, please keep visiting this website regularly.

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RELATED OUTCOMES

1. The expected outcomes of the Program are:

PO1	Computational Knowledge: Apply knowledge of computing fundamentals and domain knowledge.
PO2	Problem Analysis: Identify, formulate and solve complex computing problems reaching substantiated conclusions
PO3	Development of Solutions: Design and evaluate solutions for complex computing problems with appropriate consideration
PO4	Investigations of complex Computing problems: Use research-based knowledge and research methods for analysis and interpretation of data, and synthesis of the information to provide valid conclusions
PO5	Modern Tool Usage: Create, identify and apply appropriate techniques, resources, and modern computing tools to complex Computing activities.
PO6	Professional Ethics: Understand and commit to professional ethics and cyber regulations for professional computing practices.
PO7	Life-long Learning: Identify the need and have the ability, to engage in independent learning as a computing professional.
PO8	Communication Efficacy: Communicate effectively with the computing community, and with society.
PO9	Individual and Team Work: Function effectively in diverse teams and in multidisciplinary environments.
PO10	Innovation and Entrepreneurship: Identify a timely opportunity and using innovation to pursue that opportunity.
PO11	Research Skill - Extract information through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyze and interpret data, contribute individually/in group(s) to the development of scientific/technological knowledge in one or more domains of computer applications.
PO12	Independent and Reflective Learning - Observe and examine critically the outcomes of one's actions and make corrective measures subsequently, and learn from mistakes without depending on external feedback.

2. The expected outcomes of the Specific Program are: (upto3)

AI and ML:

PSO1	Apply the knowledge of AI to find solutions for real-life application.
PSO2	Domain Specific Learning and Contribution: Students will be able to design hardware or software solutions in AI, Imaging, Analytics and Security Domains Computer Science basics.

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CO 5		2	1	2	1								3	3
Average														

5. Course outcomes assessment plan:

components Course Outcomes	Assignment	Test/Quiz	Mid Semester	End Semester	Any other
CO 1		<input type="checkbox"/>		<input type="checkbox"/>	
CO 2	<input type="checkbox"/>			<input type="checkbox"/>	
CO 3		<input type="checkbox"/>		<input type="checkbox"/>	
CO 4		<input type="checkbox"/>		<input type="checkbox"/>	
CO 5	<input type="checkbox"/>			<input type="checkbox"/>	

BROAD PLAN OF COURSE COVERAGE

Course Activities:

S. No.	Description	Planned			Remarks
		From	To	No. of Sessions	
1.	Database concept			5	
2.	Data Models			9	
3.	Relational Model			7	
4.	Relational Database Design			9	
5.	Database Operations and Maintenance			6	

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Sessions: Total No. of Instructional periods available for the course

SESSION PLAN

UNIT-I

Lecture No.	Topics to be Covered	CO Mapped
1	Introduction , Data, Information Metadata, Terminology Of File, Association Between Fields	CO1
2	Entities And Their Attributes, Relationship Record And Files	CO1
3	Abstraction And Data Integration, Association Between Files(Record Types), Conventional File Processing System	
4	Database systems, concepts, characteristics and advantages of the database Data models, schemas & instances	CO1
5	The Three-Level Architecture Proposal For DBMS, Mapping Between Views, Data Independence.	CO1

SESSION PLAN

UNIT-II

Lecture No.	Topics to be Covered	CO Mapped
1	Introduction, Data Model Classification-(Approaches To The Relational Model, Hierarchical Model & Network Model With Examples)	CO 2
2	Concept of Data Association, entities, attributes	CO 2
3	Relationship Types, relationship sets	CO 2
4	Roles and Structural constraint, Designing ER Diagram, naming convention	CO 2
5	Converting ER to relation	CO 2
6	Practice Session I	CO 2
7	Practice Session 2	CO 2

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8	Practice Session 3	
9	Design issue Concept of File Organization – Sequential Files, Index-Sequential Files, Direct Files, Secondary Key Retrieval.	CO 2

SESSION PLAN

UNIT-III

Lecture No.	Topics to be Covered	CO Mapped
1	Relational Database: Attributes and Domains, Tuples, Relation and Their Schemas Relation Representation, Keys, Relationship	CO 3
2	Relational Operations, Integrity Rules	CO 3
3	Relational Algebra: Basic Operations	CO 3
4	Relational Algebra Queries	
5	Relational Calculus: Tuple Calculus, Domain Calculus	CO 3
6	Relational Database Manipulations: Introduction, SQL	CO 3
7	Data Manipulations in SQL, QUEL and QBE.	CO 3

SESSION PLAN

UNIT-IV

Lecture No.	Topics to be Covered	CO Mapped
1	Relational Schema, Relational Design	CO 5
2	Functional Dependency, Normalization, First –Second- Third Normal Forms	CO 5
3	Relations With More Than One Candidates Key ,Good And Bad Decomposition	CO 5

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4	Multivalued Dependency, Fourth Normal	CO 5
5	Fifth Normal Form	CO 5
6	Practice Session	CO 5
7	Practice Session	CO 5
8	Network Data Model: The Architecture of DBTG System, Schema & Subschema, and DBTG. Data Manipulation Facility.	CO 5
9	Hierarchical Data Model: The Tree Concept, Architecture of ANIMS System, Data Manipulation	

SESSION PLAN

UNIT-V

Lecture No.	Topics to be Covered	CO Mapped
1	Database Administrator (DBA, Database Security, Integrity and Control (User with Password and Complete / Limited Authorization, Encryption of Data).	CO 5
2	Concurrency Control: Problem of Concurrent Access, Resource Looking, Deadlock	CO 5
3	Database Recovery: Restore, Backward & Forward Recovery.	CO 5
4	Distributed Database: Introduction, Data Distribution, and Deadlock In Distributed Systems	CO 5
5	Security, Security And Protection, Homogeneous And Heterogeneous Systems.	
6	Knowledge Base and Database Systems, Expert Database Systems, Object Database System	