

Name of Institute: INSTITUTE OF TECHNOLOGY & ENGINEERING

Name of Faculty: Dr.Jay Dave

Course code: CE0317

Course name: Principles of Database Management System

Pre-requisites: NIL

Credit points: 0

Offered Semester: III

Course Coordinator

Full Name: Dr.Jay Dave

Department with siting location: Computer Engineering (3rd floor ,Faculty room, BB building)

Telephone: 990959949

Email: jaydave.ce@indusuni.ac.in

Consultation times: Saturday (12:00 to 4:00)

Course Lecturer

Full Name: Prof.Sejal Thakkar

Department with siting location: Computer Engineering (4th floor ,Faculty room, BB building)

Telephone: 7990552332,9033380982

Email: sejalthakkar.ce@indusuni.ac.in

Consultation times: Saturday (12:00 to 4:00)

Full name: Prof.Khusgbu Maurya

Department with siting location: Computer Engineering (4th floor ,Faculty room, BB building)

Telephone:9998956100

Email: khushbumaurya.ce@indusuni.ac.in

Consultation times: Saturday (12:00 to 4:00)

Students will be contacted throughout the Session via Mail with important information relating to this Course.

Course Objectives

By participating in and understanding all facets of this Course a student will:

1. To understand the overall structure and design of DBMS
2. To provide students with the background to design, implement, and use database Management systems.

Course Outcomes (CO)

After successful completion of the course, student will able:

1. Understand and evaluate the role of database management systems in information technology applications within organizations;
2. Recognize and use contemporary logical design methods and tools for databases;
3. Derive a physical design for a database from its logical design;
4. Implement a database solution to an information technology problem;
5. Understand the SQL data definition and SQL query languages;
6. Have been introduced to the alternative design techniques utilized for Management Reporting applications.
7. Develop sophisticated queries to extract information from large datasets.

Course Outline

Entity-Relationship model, SQL, Transactions, Recovery

Method of delivery

1. Chalk & Talk
2. PPT presentation

Study time

3 lectures per week
2 hour labs per week

CO-PO Mapping (PO: Program Outcomes)

Course Outcome	Program Outcomes												Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	√			√							√		√		√
CO2	√	√		√							√			√	√
CO3	√	√			√		√							√	√
CO4	√	√		√	√		√								
CO5	√		√				√								
CO6						√							√		
CO7			√						√						

Blooms Taxonomy and Knowledge retention (For reference)
 (Blooms taxonomy has been given for reference)

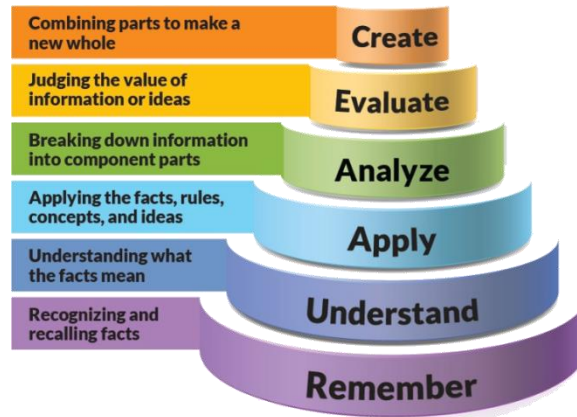


Figure 1: Blooms Taxonomy

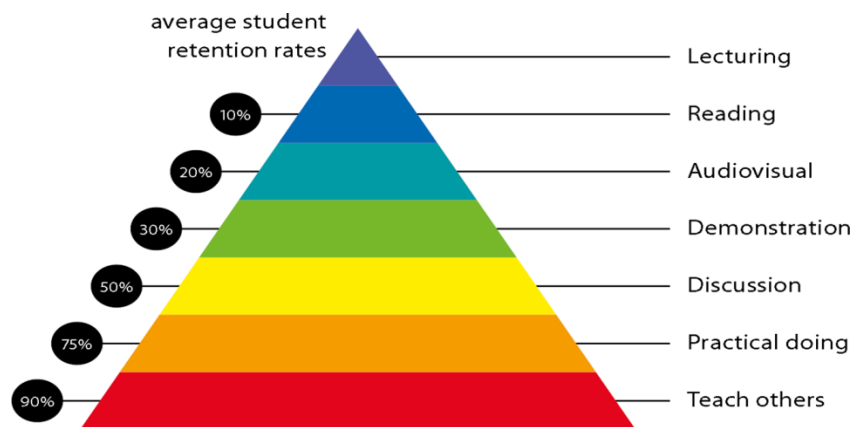


Figure 2: Knowledge retention

Graduate Qualities and Capabilities covered
 (Qualities graduates harness crediting this Course)

General Graduate Qualities	Specific Department of _____ Graduate Capabilities
<p>Informed Have a sound knowledge of an area of study or profession and understand its current issues, locally and internationally. Know how to apply this knowledge. Understand how an area of study has developed and how it relates to other areas.</p>	<p>1 Professional knowledge, grounding & awareness</p>

<p>Independent learners Engage with new ideas and ways of thinking and critically analyze issues. Seek to extend knowledge through ongoing research, enquiry and reflection. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.</p>	<p>2 Information literacy, gathering & processing</p>
<p>Problem solvers Take on challenges and opportunities. Apply creative, logical and critical thinking skills to respond effectively. Make and implement decisions. Be flexible, thorough, innovative and aim for high standards.</p>	<p>4 Problem solving skills</p>
<p>Effective communicators Articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognize how culture can shape communication.</p>	<p>5 Written communication 6 Oral communication 7 Teamwork</p>
<p>Responsible Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.</p>	<p>10 Sustainability, societal & environmental impact</p>

Practical work:

(Mention what practical work this Course involves)

As a part of practical, student have to perform various database relevant activities like creating, updating, deleting and querying using the DBMS tools.

Lecture/tutorial times

(Give lecture times in the format below)

For 3 Sem CE-A
Lecture01: Monday 11:10 to 12:10
Lecture02: Thursday 11:10 to 12:10
Lecture03: Friday 11:10 to 12:10

For 3 Sem-CE-B
Lecture01: Tuesday 02:00 to 03:00
Lecture02: Wednesday 02:00 to 03:00
Lecture03: Thursday 02:00 to 03:00
For labs it will be updated as per the time table.

Attendance Requirements

The University norms states that it is the responsibility of students to attend all lectures, tutorials, seminars and practical work as stipulated in the Course outline. Minimum attendance requirement as per university norms is compulsory for being eligible for mid and end semester examinations.

Details of referencing system to be used in written work

Text books

Text Book :

- 1.Database System Concepts, Abraham Silberschatz, Henry F. Korth & S. Sudarshan, McGraw Hill.
- 2.SQL- PL/SQL by Ivan bayross

Additional Materials

Reference Book:

- 1.An introduction to Database Systems, C J Date, Addition-Wesley.
2. Understanding SQL by Martin Gruber, BPB

ASSESSMENT GUIDELINES

Your final course mark will be calculated from the following:

Example:

Theory:

Internal evaluation 20% Objective (1-3-4)

05 marks as attendance bonus for all students having attendance > 80%

05 marks for presentation

10 marks for assignment or case studies, limited to minimum 02 assignments per course

Mid semester 40% (due week 10) Objectives (2-5)

Final exam (closed book) 40% Objectives (1-5)

Practical:

20% for performance

20% practical test +viva

20% for lab file, regularly and discipline

40% end semester practical exam +Viva

SUPPLEMENTARY ASSESSMENT

Students who receive an overall mark less than 40% in mid semester or end semester will be considered for supplementary assessment in the respective components (i.e mid semester or end semester) of semester concerned. Students must make themselves available during the supplementary examination period to take up the respective components (mid semester or end semester) and need to obtain the required minimum 40% marks to clear the concerned components.

Practical Work Report/Laboratory Report:

A report on the practical work is due the subsequent week after completion of the class by each group.

Late Work

Late assignments will not be accepted without supporting documentation. Late submission of the reports will result in a deduction of -% of the maximum mark per calendar day

Format

All assignments must be presented in a neat, legible format with all information sources correctly referenced. **Assignment material handed in throughout the session that is not neat and legible will not be marked and will be returned to the student.**

Retention of Written Work

Written assessment work will be retained by the Course coordinator/lecturer for two weeks after marking to be collected by the students.

University and Faculty Policies

Students should make themselves aware of the University and/or Faculty Policies regarding plagiarism, special consideration, supplementary examinations and other educational issues and student matters.

Plagiarism - Plagiarism is not acceptable and may result in the imposition of severe penalties. Plagiarism is the use of another person's work, or idea, as if it is his or her own - if you have any doubts at all on what constitutes plagiarism, please consult your Course coordinator or lecturer. Plagiarism will be penalized severely.

Do not copy the work of other students.

Do not share your work with other students (except where required for a group activity or assessment)

Course schedule (subject to change)

(Mention quiz, assignment submission, breaks etc as well in the table under the Teaching Learning Activity Column)

Week #	Topic & contents	CO Addressed	Teaching Learning Activity (TLA)
Weeks 1	Introduction: data, database, database management, database management system, application of database, why database, Data independence.	CO1	
Weeks 2	Architecture: The three levels of architecture-Levels, Mapping, Database users and DBA Brief overview of different types of model.		
Week 3	Entity-Relationship Model: Introduction, An overview of the E/R model, E/R diagrams, Database design with the E/R model, extended E-R features – generalization, specialization, aggregation, reduction to E-R database schema	CO4	
Week 4	Relational Model: Structure of relational databases, relational model, relations, relational integrity, Domains, Relational Algebra(fundamental and extended) and query.	CO3	
Week 5	Relation database design: Functional Dependency – definition, trivial and non-trivial FD, closure of FDset, closure of attributes, irreducible set of FD, Normalization – 1NF, 2NF.	CO4	
Week 6	3NF, composition using FD-dependency preservation, BCNF, Multivalued dependency, 4NF, Join dependency and 5NF.	CO4	
Week 7	Transaction Management and Security: Transaction concepts, properties of transactions. Serializability of transactions, testing	CO5	

		for serializability , System recovery.		
Week 8		Two- Phase Commit protocol, Recovery and Atomicity, Log-based recovery, concurrent executions of transactions and related problems.	CO5	
Week 9		Locking mechanism, solution to concurrency related problems, deadlock, , two-phase locking protocol, Isolation, Intent locking.	CO5	
Week 10		Security: Introduction, Discretionary access control, Mandatory Access Control, Data Encryption.	CO5	
Week 11		SQL: Basics of SQL, DDL,DML,DCL, structure – creation, alteration, defining constraints – Primary key, foreign key, unique, not null, check, IN operator, aggregate functions, Built-in functions –numeric, date, string functions, set operations, sub-queries, correlated sub-queries.	CO2	
Week 12		Join, Exist, Any, All , view and its types., transaction control commands. PL/SQL: Cursors, Stored Procedures, Stored Function, Database Triggers.	CO2	

**PROGRAM MAP for Bachelor of Engineering
 (CE / CSE / IT)**

