

Maharashtra State Board of Technical Education, Mumbai
TEACHING PLAN (TP-TH)/ Course Information Sheet (CIS)

K-1

Academic Year: 2026-27

Date: 27/06/2026

Institute Name: K K Wagh Polytechnic, Nashik

Institute Code: 0078

Program and Code: Computer Technology (CM)

Course Code & Abbr.: 313302 (DMS)

Course Name: Database Management System (DMS) **Course Index:** CI304 **Scheme:** K **Learning Hrs.:** 45

Class: SYCM-Win **Semester:** 3rd **Scheme:** K **Name of Faculty:** Mr. A. D. Talole

● **Teaching-Learning & Assessment Scheme:**

Course Title	Course Code / Abbr	Course Category	Learning Scheme						Credits	TH Paper Duration (Hrs.)	Assessment Scheme									
			Actual Contact Hrs/ Week			SLH	NLH	Theory				Based on LL & TSL Practical				Based on SL		Total Marks		
			CL	TL	LL			FA TH			SA TH	Total		FA-PR		SA-PR			SLA	
												Max	Min	Max	Min	Max	Min		Max	Min
Database Management System	313302/ DMS	DSC	3	1	4	2	10	5	3	30	70	100	40	50	20	25#	10	25	10	200

Abbreviations: CL- Class Room Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, IKS – Indian Knowledge System, SLA - Self Learning Assessment

Legends: @ Internal Assessment, # External Assessment, *# On Line Examination, @\$ Internal Online Examination

● **Course Outcomes (COs): Theory & Practical**

By learning course Database Management System (DMS-313315), the Second Year students will be able to:

CO No.	TLO No.	Course Outcomes (COs) / Theory Learning Outcomes (TLOs)
CO304.1 (CO1)	Explain Concept of Database Management System	
	TLO 1.1	Explain given database concept
	TLO 1.2	Explain Overall structure of DBMS
	TLO 1.3	Describe architecture of database
CO304.2 (CO2)	Design The Database for Given Problem	
	TLO 2.1	Explain relational structure of database
	TLO 2.2	State types of keys with example
	TLO 2.3	Draw ER diagrams for given problem
CO304.3 (CO3)	Manage Database using SQL	
	TLO 3.1	Write SQL queries using DDL, DML, DCL and TCL
	TLO 3.2	Write SQL queries to join relations
	TLO 3.3	Write SQL queries for ordering and grouping data
	TLO 3.4	Use various class of operators in SQL.
CO304.4 (CO4)	Implement PL/SQL Codes for Given Application	
	TLO 4.1	Use control Structures in PL-SQL.
	TLO 4.2	Handle different types of exceptions.
	TLO 4.3	Explain various types of cursors
	TLO 4.4	Create Procedure, Function on given problem
CO304.5 (CO5)	Apply Security and Backup Methods on Database	
	TLO 5.1	Implement SQL queries for database administration.
	TLO 5.2	Explain concept of various types database backup processes
	TLO 5.3	Describe various terms related to advanced database concepts

● **Teaching Plan:**

Unit No. (Allotted Hrs. & Marks)	COs & TLOs	Unit Title with Topic Details/Contents	Planned Dates (From-To & No. of Lectures)	Actual Execution (From-To & No. of Lectures)	Teaching Method/ Media	Sign and Remark for Completion
01 (06) (12)	CO1 TLO- 1.1, 1.2, 1.3.	Unit-1 Introduction to Database System 1.0 Overview of the Course, Prerequisites, Scope, Skills, Career & Opportunities, MNCs 1.1 Database concepts:-Data, Database, Database management system (DBMS), 1.2 File system vs DBMS, Applications of DBMS	01/07/2026 To 06/07/2026 (03) (01 Ex)		Chalk-Board, LCD+PPTs, eNotes, Ref. Book, MKCL ERA, Online Web Reference	
		1.3 Data Abstraction, Data Independence, Database Schema, The Codd's rules, Overall structure of DBMS 1.4 DBMS Architecture: Two tier and Three tier architecture of database. 1.5 Data Models: Relational Data Model. 1.6 Hierarchical, Network Data Model	08/07/2026 To 15/07/2026 (04)		Chalk-Board, LCD+PPTs, eNotes, MKCL ERA, YouTube Videos, Demo using Oracle 10g	
02. (08) (12)	CO2 TLO- 2.1 2.2 2.3 2.4	Unit-2 Relational Data Model 2.1 Relational Structure :- Tables (Relations), Rows (Tuples), Domains, Attributes, Entities 2.2 Keys : Super Keys, Candidate Key, Primary Key, Foreign Key. 2.3 Data Constraints :- Domain Constraints , Referential Integrity Constraints	16/07/2026 To 22/07/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, Online Web Reference, YouTube Videos, Demo using Oracle 10g	
		2.4 Entity Relationship Model : - Strong Entity set, Weak Entity set, 2.5 Types of Attributes, Symbols for ER diagram, ER Diagrams 2.6 Examples of ER Diagrams 2.7 Normalization:- Functional dependencies, 2.8 Normal forms: 1NF, 2NF, 3NF	23/07/2026 To 03/08/2026 (05)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos	
03. (12) (18)	CO3 TLO- 3.1 3.2 3.3 3.4 3.5	Unit3 Interactive SQL and Performance Tuning 3.1 SQL: -Data-types, Data Definition Language (DDL), Data Manipulation language (DML), Data Control Language (DCL), Transaction Control Language (TCL). 3.2 Clauses & Join:- Different types of clauses 3.3 Where, Group by ,Order by, Having 3.4 Joins: Types of Joins	05/08/2026 To 12/08/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos Demo using Oracle 10g	
		3.5 Nested queries. 3.6 Operators:- Relational, Arithmetic, 3.7 Logical, Set operators. 3.8 Functions:- Numeric , Date and time, String, Aggregate.	13/08/2026 To 20/08/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos Demo using Oracle 10g	
		3.9 Views, Sequences, Indexes intro 3.10 Views: Concept, Create, Update Drop Views. 3.11 Sequences :- Concept ,Create, Alter, Drop, Use of Sequence in table 3.12 Index: Concept , Types of Index , Create , Drop Indexes	24/08/2026 To 31/08/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos Demo using Oracle 10g	

04. (12) (18)	CO4 TLO- 4.1 4.2 4.3 4.4 4.5	Unit4 PL/SQL Programming 4.1 Introduction of PL/SQL: -Advantages of PL/SQL, 4.2 The PL/SQL Block Structure, 4.3 PL/SQL Data Types, Variable , Constant 4.4 Control Structure:- Conditional Control	02/09/2026 To 09/09/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos Demo using Oracle 10g	
		4.5 Iterative Control, 4.6 Sequential Control. 4.7 Exception handling: -Predefined Exception, User defined Exception. 4.8 Cursors:- Implicit and Explicit Cursors, Declaring opening and closing cursor, fetching a record from cursor	10/09/2026 To 16/09/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos Demo using Oracle 10g	
		4.9 Cursor for loops, parameterized cursors 4.10 Procedures:- Advantages, Create, Execute and Delete a Stored Procedure 4.11 Functions:- Advantages, Create, Execute and Delete a Function 4.12 Database Triggers :- Use of Database Triggers, Types of Triggers, Create Trigger, Delete Trigger	17/09/2026 To 24/09/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, YouTube Videos Demo using Oracle 10g	
05. (07) (10)	CO5 TLO- 5.1 5.2 5.3	Unit5 Database Administration 5.1 Introduction to database administration:- Types of database users, 5.2 Create and delete users, Assign privileges to users 5.3 Transaction: Concept, Properties & States of Transaction 5.4 Database Backup: Types of Failures, Causes of Failure, Database backup introduction, types of database backups: Physical & Logical	28/09/2026 To 07/10/2026 (04)		Chalk-Board, LCD+PPTs, YouTube Videos	
		5.5 Data Recovery – Recovery concepts , recovery techniques- roll forward ,Rollback 5.6 Overview of Advanced database concepts:- Data Warehouse ,Data lakes , 5.7 Data mining, Big data ,Mongo DB , DynamoDB	08/10/2026 To 15/10/2026 (03)		Chalk-Board, LCD+PPTs, YouTube Videos	
		Total	45 Hrs.			

• Chapter wise CO-PO Mapping:

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes PSOs	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PSO-1	PSO-2
CO1	3	--	--	--	1	--	1	1	--
CO2	2	2	3	2	1	2	1	1	--
CO3	1	2	2	2	--	2	1	1	--
CO4	1	3	3	2	1	3	2	2	1
CO5	1	1	2	2	2	2	1	1	--

- Legends:- High:03, Medium:02, Low:01, -- :No Mapping

Sr. No.	Programme Outcomes (POs)	Programme Specific Outcomes (PSOs)
1.	PO-1 Basic and Discipline Specific Knowledge	PSO1 Apply acquired skills of programming, networking, hardware & database for computer based problem solving and software development. PSO-2 Pursue higher studies in the field of Computer Science / Computer Engineering / Information Technology.
2.	PO-2 Problem Analysis	
3.	PO-3 Design/ Development of Solution	
4.	PO-4 Engineering Tools	
5.	PO-5 Engineering Practices for Society, Sustainability and Environment	
6.	PO-6 Project Management	
7.	PO-7 Life Long Learning	

● Weightage to Learning Efforts & Assessment Purpose (Specification Table)

Unit No.	Unit Title	Aligned COs	Learning Hours	R-Level	U-Level	A-Level	Total Marks
1	Introduction To Database System	CO1	6	4	6	2	12
2	Relational Data Model	CO2	8	2	4	6	12
3	Interactive SQL and Performance Tuning	CO3	12	2	6	10	18
4	PL/SQL Programming	CO4	12	4	4	10	18
5	Database Administration	CO5	7	2	4	4	10
		Total :	45	14	24	32	70

Learning Levels with reference to Bloom's Taxonomy: R Level: Remember, U Level: Understand, A-Level: Apply

● Formative & Summative Assessment Criteria:

■ Theory Assessment:

a) Formative assessment (TH-FA) :

- Two offline class tests each of 30 marks will be conducted as per MSBTE guidelines. The average of two class test marks will be consider for final TH-FA(Average) out of 30 marks.

b) Summative Assessment (TH- SA) :

- The comprehensive End semester assessment will be done by MSBTE by a Theory written Examination for 70 marks. Question Paper and Assessment is performed by MSBTE.
- Final Theory Score out of 100 Marks will be derived as the total score as below:

$$\text{TH-SA [out of 70]} + \text{TH- FA [Average out of 30]} = 100 \text{ Marks}$$

■ Practical Assessment:

- Formative Assessment (FA) of each practical/experiment will be performed progressively for 50 marks. The assessment will be performed based on the Regularity in Practical Performance, Tool Selection Ability, Use of Appropriate tool to perform the Identified tasks, Algorithm/Solution developed, Quality of output achieved, Answer to sample questions and Submit report in total time.
- Final Term Work (FA-PR) of 50 marks is calculated based on scores in Formative Assessment for all practicals/experiments as:

$$\text{Term Work Marks} = \frac{\text{Sum of Total Marks Scored in FA}}{(50 \times \text{Total Number of Experiments})}$$
- Self-learning Activities (SLA) includes Micro project / Assignment / other activities related to subject/course and it will be evaluated out of 25 Marks.
- A Summative (comprehensive) Assessment (SA-PR) of Practical will be performed as End Semester Examination (ESE). The SA-PR will be for 50 Marks with MSBTE guidelines at the end of semester. The schedule of MSBTE Practical ESE will be display on Notice board prior to examination.

- **References:**

1. Suggested Books for Reference:

Sr. No	Author	Title of the Book	Publisher
1.	Henry F. Korth	Database System Concepts	McGraw Hill Education ISBN : 9780078022159
2.	Ivan Bayross	SQL, PL/SQL – The Programming Language of Oracle	BPB Publication ISBN 10: 8170298997
3.	ISRD Group	Introduction to Database Management Systems	McGraw Hill Education ISBN 10:0070591199
4.	Catherine Creary, Christopher Allen	Introduction to Relational Database & SQL Programming	Tata McGraw Hill Education, New Delhi,
5.	Vikram Vaswani	Complete Reference: MySQL	Tata McGraw Hill Education, New Delhi, 2015

2. Learning Websites URLs & Portals:

Sr. No	Website /Portal Link/URL	Description
1	https://nptel.ac.in/courses/106105175	Data Base Management System
2	https://www.w3schools.com/sql/	SQL Tutorial
3	https://www.tutorialspoint.com/sql/index.htm	SQL Programming Language
4	https://ict.iitk.ac.in/courses/fundamentals-of-database-system/	Fundamentals of dbms
5	http://www.studytonight.com/dbms/overview-of-dbms.php	Overview of DBMS
6	http://www.slideshare.net/signer/relational-database-design	Relational database design
7	http://www.tutorialspoint.com/dbms/database_normalization.html	Database Normalization
8	http://www.beginnersbook.com/2015/04/dbms-tutorial/	DBMS Tutorial

3. URLs of referred YouTube Videos:

Sr. No	URL/YouTube Link	Topic/ Description
1	https://www.youtube.com/watch?v=uKmfjzKoh2k	PL-SQL Loops - For Loop, While Loop, Simple PL-SQL
2	https://www.youtube.com/watch?v=Oj7344m_fy0	PLSQL Cursor, Implicit and Explicit Cursor, How to Open,
3	https://www.youtube.com/watch?v=KD0t843oQlw	PLSQL Trigger, Row and Statement Level Trigger, How to
4	https://www.youtube.com/watch?v=wAEL5RnX_Yc	Database Security Concepts
5	https://www.youtube.com/watch?v=Z57b-1HLSU8	ACID Properties in DBMS acid properties in dbms in
6	https://www.youtube.com/watch?v=8JNH_ZGbnfY	Database Backup and Recovery Presentation
7	https://www.youtube.com/watch?v=FR4QleZaPeM	What is Database & SQL
8	https://www.youtube.com/watch?v=p3yJZH8_bsc	Concept of Keys in DBMS - Super, Primary, Candidate,
9	https://www.youtube.com/watch?v=oylHRgBDfNc	Basic Concept of Normalization
10	https://www.youtube.com/watch?v=w4zov_X9ckQ	Codd Rules (Hindi) DBMS
11	https://www.youtube.com/watch?v=zYH-e6tUYbw	Introduction to Joins and its types Need of Joins with
12	https://www.youtube.com/watch?v=Yr4pHPZCshA	QL Aggregate Functions - SUM, AVG(n), COUNT, MIN,
13	https://www.youtube.com/watch?v=zjql5V2BKbY	Types of SQL Function
14	https://www.youtube.com/watch?v=uKmfjzKoh2k	PL-SQL Loops - For Loop, While Loop, Simple PL-SQL
15	https://www.youtube.com/watch?v=Oj7344m_fy0	PLSQL Cursor, Implicit and Explicit Cursor, How to Open,
16	https://www.youtube.com/watch?v=KD0t843oQlw	PLSQL Trigger, Row and Statement Level Trigger, How to

4. Self-Prepared Video URLs:

Sr. No	URL/YouTube Link	Topic/ Description
1	https://youtu.be/KA0og09KzCc	INTRODUCTION TO DBMS
2	https://youtu.be/m36WAmmoNIU	SQL Functions Part 1
3	https://youtu.be/aP-ZK7Z_B1Y	PL SQL Programming Part 1
4	https://youtu.be/YoKLMzajrY	SQL Programming Part 2
5	https://youtu.be/2FASXFj-6Rk	SQL Programming Part 3
6	https://youtu.be/Sj2YDes04mY	SQL Queries Part 1
7	https://youtu.be/Am6QTqejB0g	DMS Practical 3 ER Diagram
8	https://youtu.be/szlr5kvE8E	PL/SQL Cursor
9	https://youtu.be/k9XCRpPRKIQ	DMS Practical 4 DDL Commands

5. Tools to Use for Teaching-Learning, Assessment and Evaluation:

- **Google Classroom** – It will be used to/for:
 - Organized Sharing of the Learning material such as PPTs, eNotes, Question Banks, Sample Solutions with students by class.
 - Conduction of the MCQ Tests and its evaluation.
 - Online sharing of Assignments and the Assessment of Assignments.
 - Monitor the students response and progress.
- **MKCL ERA LMS:** – The use of MKCL ERA LMS is/for:
 - Sharing by the Class, the Learning material such as PPTs, eNotes, Video Links by the Units
 - Sharing of Question Banks, Sample Solutions with students by class.
 - Conduct the Unit wise Quiz and perform evaluation of students.
 - Online Conduction of the Tests/Assignments and its assessment.
 - Using this detailed student's reports about his/her performance can be made available.

Mr. A. D. Talole
(Faculty Name & signature)

Prof. M. P. Bhosale
(HOD-Computer Tech. Dept.)

CC-

1. DMS - 313302 Course File

2. Notice Board / ERP

3. Institute Website / CIAAN Coordinator