Database Systems (CSEG7029) - Evaluation Framework

Course Overview

- **Course Code**: CSEG7029
- **Course Name**: Database Systems
- **Credits**: 4 (3L + 0T + 1P)
- **Total Contact Hours**: 75 (45 Theory + 30 Lab)

THEORY COMPONENT EVALUATION FRAMEWORK

Overall Examination Scheme

Components	Internal Assessment (IA)	Mid Semester	End Semester	Total
Weightage (%)	50	20	30	100

Internal Assessment (IA) - 50% Breakdown

1. Quizzes (15%)

- **Frequency**: 4-5 quizzes throughout the semester
- **Duration**: 15-20 minutes each
- **Format**:
  - MCQs, Fill-in-the-blanks, Short answers
  - Online/Offline based
- **Coverage**:
  - Quiz 1: Unit I (Introduction & Relational Databases)
  - Quiz 2: Unit II (Transaction Management)
  - Quiz 3: Unit III (Storage & Indexing)
  - Quiz 4: Unit IV (Distributed & NoSQL Databases)
  - Quiz 5: Unit V (Dimensional Database Design)
- **Best 4 out of 5 quizzes considered**

2. Assignments (20%)

- **Number**: 3-4 assignments
- **Types**:

- **Assignment 1**: ER Diagram Design & Normalization (Unit I)
  - Design complex ER diagrams
  - Apply normalization techniques (1NF to BCNF)
  - Weight: 5%
- **Assignment 2**: Transaction Management & Query Optimization (Unit II)
  - Solve concurrency control problems
  - Design recovery scenarios
  - Query optimization exercises
  - Weight: 7%
- **Assignment 3**: Database Architecture & NoSQL (Units III & IV)
  - Storage structure design
  - Distributed database scenarios
  - NoSQL database comparison and use cases
  - Weight: 8%

3. Presentations (10%)

- **Format**: Individual/Group presentations (15-20 minutes)
- **Topics**:
  - Advanced database concepts
  - Current research papers in database systems
  - Case studies on real-world database implementations
  - Emerging database technologies
- **Evaluation Criteria**:
  - Content accuracy and depth (40%)
  - Presentation skills and clarity (30%)
  - Q&A handling (20%)
  - Visual aids and organization (10%)

4. Extempore (5%)

- **Frequency**: 2-3 sessions during the semester
- **Duration**: 5-7 minutes per student
- **Topics**: Current database trends, spontaneous problem-solving

- **Evaluation**: Communication, technical knowledge, confidence

Mid Semester Examination - 20%

- **Duration**: 2 hours
- **Coverage**: Units I, II, and III (partial)
- **Question Pattern**:
  - Part A: MCQs/Short answers (30%)
  - Part B: Medium questions (40%)
  - Part C: Long questions/Problem solving (30%)
- **Marks Distribution**: 40 marks

End Semester Examination - 30%

- **Duration**: 3 hours
- **Coverage**: All units with emphasis on Units IV, V, and VI
- **Question Pattern**:
  - Part A: MCQs/Short answers (20%)
  - Part B: Medium questions (40%)
  - Part C: Long questions/Case studies (40%)
- **Marks Distribution**: 60 marks

LAB COMPONENT EVALUATION FRAMEWORK

Overall Examination Scheme - Continuous Assessment

Components	Quiz & Viva	Performance & Lab Report	Total
Weightage (%)	50	50	100

Quiz & Viva Component - 50%

Lab Quizzes (25%)

- **Frequency**: 4-5 quizzes aligned with experiment clusters
- **Format**:
  - Practical questions on SQL, PL/SQL, MongoDB
  - Database design problems
  - Conceptual questions on implemented experiments

- **Distribution**:
  - Quiz 1: Experiments 1-5 (ER Design, DDL/DML, Constraints)
  - Quiz 2: Experiments 6-9 (Queries, Functions, Joins, Views)
  - Quiz 3: Experiments 10-17 (Advanced SQL, PL/SQL, Triggers)
  - Quiz 4: Experiments 18-21 (NoSQL/MongoDB)
  - Quiz 5: Mini Projects (Experiments 22-23)

Viva Voce (25%)

- **Frequency**: Continuous assessment after every 3-4 experiments
- **Evaluation Areas**:
  - Understanding of implemented experiments
  - Ability to modify and extend existing code
  - Theoretical knowledge behind practical implementations
  - Problem-solving approach
- **Viva Schedule**:
  - Viva 1: After Experiments 1-4 (Database Design & Basic SQL)
  - Viva 2: After Experiments 5-9 (Advanced SQL & Functions)
  - Viva 3: After Experiments 10-14 (PL/SQL Programming)
  - Viva 4: After Experiments 15-17 (Cursors & Triggers)
  - Viva 5: After Experiments 18-21 (NoSQL)
  - Final Viva: Mini Projects presentation

Performance & Lab Report Component - 50%

Lab Performance (25%)

- **Evaluation Criteria**:
  - **Attendance & Punctuality** (5%): Regular attendance and timely completion
  - **Code Quality & Implementation** (10%):
    - Correctness of SQL queries and PL/SQL programs
    - Optimization and efficiency
    - Error handling
  - **Problem-solving Approach** (5%):
    - Logical thinking

        - Debugging skills
        - Innovation in solutions
    - **Active Participation** (5%):
        - Engagement during lab sessions
        - Helping peers
        - Asking relevant questions

Lab Reports (25%)

- **Submission**: Weekly lab reports for each experiment
- **Report Structure**:
    - **Objective & Theory** (20%): Clear understanding of experiment goals
    - **Code Implementation** (40%):
        - Complete and well-documented code
        - Screenshots of execution
        - Test cases and outputs
    - **Analysis & Results** (25%):
        - Discussion of results
        - Challenges faced and solutions
        - Performance analysis where applicable
    - **Conclusion** (15%):
        - Learning outcomes
        - Future scope
        - References

DETAILED ASSESSMENT RUBRICS

Theory Assessment Rubric

Quiz Evaluation (15 marks scale)

- **Excellent (13-15)**: Complete understanding, accurate answers
- **Good (10-12)**: Good understanding with minor errors
- **Satisfactory (7-9)**: Basic understanding, some conceptual gaps
- **Needs Improvement (0-6)**: Limited understanding, major errors

Assignment Evaluation

- **Content Accuracy (40%)**
- **Completeness (25%)**
- **Presentation & Organization (20%)**
- **Originality & Innovation (15%)**

Presentation Evaluation

- **Technical Content (40%)**
- **Communication Skills (30%)**
- **Visual Aids (15%)**
- **Time Management (15%)**

Lab Assessment Rubric

Code Implementation Rubric

- **Excellent (90-100%)**:
  - Code runs perfectly
  - Optimal solutions
  - Excellent documentation
  - Creative problem-solving
- **Good (80-89%)**:
  - Code runs with minor issues
  - Good approach to problem-solving
  - Adequate documentation
  - Meets all requirements
- **Satisfactory (70-79%)**:
  - Code runs but may have logical errors
  - Basic problem-solving approach
  - Minimal documentation
  - Meets most requirements
- **Needs Improvement (<70%)**:
  - Code has significant errors

- Poor problem-solving approach
- No documentation
- Fails to meet requirements

GRADE MAPPING

Theory Component

- **A+ (90-100)**: Exceptional understanding and application
- **A (80-89)**: Excellent grasp of concepts
- **B+ (70-79)**: Good understanding with minor gaps
- **B (60-69)**: Satisfactory knowledge
- **C+ (50-59)**: Basic understanding
- **C (40-49)**: Marginal pass
- **F (<40)**: Fail

Lab Component

- **A+ (90-100)**: Outstanding practical skills and innovation
- **A (80-89)**: Excellent implementation and understanding
- **B+ (70-79)**: Good practical skills
- **B (60-69)**: Satisfactory implementation
- **C+ (50-59)**: Basic practical competency
- **C (40-49)**: Marginal practical skills
- **F (<40)**: Inadequate practical skills

ASSESSMENT TIMELINE

Theory Assessment Schedule

- **Week 2**: Quiz 1 + Assignment 1 release
- **Week 4**: Assignment 1 submission + Quiz 2
- **Week 6**: Presentation 1 + Assignment 2 release
- **Week 8**: Mid Semester Exam
- **Week 10**: Quiz 3 + Assignment 2 submission
- **Week 12**: Quiz 4 + Assignment 3 release

- **Week 14**: Presentation 2 + Assignment 3 submission
- **Week 15**: Quiz 5 + Extempore sessions
- **Week 16**: End Semester Exam

Lab Assessment Schedule

- **Continuous**: Weekly lab reports and performance assessment
- **Week 3**: Lab Quiz 1 + Viva 1
- **Week 6**: Lab Quiz 2 + Viva 2
- **Week 9**: Lab Quiz 3 + Viva 3
- **Week 12**: Lab Quiz 4 + Viva 4
- **Week 14**: Lab Quiz 5 + Viva 5
- **Week 15**: Mini Project presentations + Final Viva

SPECIAL CONSIDERATIONS

Make-up Assessments

- Medical/emergency cases: Alternative assessment within 1 week
- Documentation required for absence
- Maximum 1 make-up opportunity per assessment type

Plagiarism Policy

- Zero tolerance for copied assignments/projects
- Similarity check tools to be used
- Penalties: Warning → Grade reduction → Course failure

Continuous Improvement

- Mid-semester feedback collection
- Assessment method refinement based on student performance
- Regular calibration meetings among faculty

This comprehensive evaluation framework ensures fair, continuous, and holistic assessment of students while aligning with the course objectives and learning outcomes.