Course Objective and Outcome Form
Department of Electrical and Computer Engineering
School of Engineering and Physical Sciences
North South University, Bashundhara, Dhaka-1229, Bangladesh

1. **Course Number and Title:** CSE 411 - Advanced Database Systems

2. **Number of Credits:** 3 Credits

3. **Type: Elective Course (Software Engineering Trail)**

4. **Prerequisites:** CSE 311

5. **Name of the Instructor:** Dr. Abu Sayed Md. Latiful Hoque

6. **Office and Contact:** SAC 1044B, mobile 01556346357, email: abu.hoque@northsouth.edu

7. **Course Summary:** This course will elaborate about the Query Evaluation and Optimization, Concurrency Control and Recovery Management, Database System Architectures, Advanced Data Models: Object-Oriented Model, Object-Relational Model, NO-SQL Model etc., Distributed Database: Transaction and Query Processing, Data Warehouse: Design and Implementation.

8. **Course Objectives:**

   The objectives of this course are to:

   a. acquire in depth knowledge about Query Evaluation and Optimization, Concurrency Control and Recovery Management,
   b. get students familiar with Advanced Data Models: Object-OrientedModel, Object-Relational Model, NO-SQL Model etc.,
   c. earn knowledge about the parallel and distributed database system architectures,
   d. design object based, object-relational and distributed databases in most optimized manner,
   e. acquire knowledge about the design and implementation of a data warehouse.

9. **Course Outcomes (COs):**

   Upon Successful completion of this course, students will be able to:

Sl.	CO Description	Weightage (%)
1	**perform** performance evaluation and optimization of query processing in database management system,	20%
2	**explain** concurrency control, recovery management and DBMS system architectures,	20%

3	**explain** the Advanced Data Models: Object-Oriented Model, Object-Relational Model, NO-SQL Model etc.,	30%
4	**design** object based, object-relational and distributed databases in most optimized manner and the schema for the data warehouse.	30%

10. **Tentative lecture schedule**

Week	Content
Week 1-3	Storage, Indexing, Query Processing and Optimization
Week 4-6	Transaction, Concurrency Control and Recovery Management,
Week 7-9	Database System Architectures, Distributed Database: Transaction and Query Processing
Week 10-12	Advanced Data Models: Object-Oriented Model, Object-Relational Model, NO-SQL Model etc., Big Data and Data Warehouse

11. **Resources**

Text books:

No	Name of Author(s)	Title of Book	Edition	Publisher's Name	ISBN
1	Abraham Silberschatz Henry F. Korth, S. Sudarshan	Database System Concepts	7th .	McGraw-Hill	ISBN-13: 978-0073523323

12. **Weightage Distribution among Assessment Tools (Tentative)**

Assessment Tools	Weightage (%)	Remarks
Attendance	5	
Class Performance	5	
Quizzes /Assignments	20	Best 2 out of 3
Midterm	30	
Final Exam	40	
Total	100	

13. Examinations schedule

Assessment Tools	**Date**
Attendance	
Class Performance	Instant
Quizzes: QUIZ 1	Week 4
Midterm	Week 6
Quizzes: QUIZ 2	Week 8
Quizzes: QUIZ 3	Week 11
Final Exam	As per NSU Schedule
Result	As per NSU academic calendar