Course Outline for: COMT 1182 Advanced Database Management Systems

A.   **Course Description**
1.   Number of credits: 3
2.   Lecture hours per week: 3
3.   Prerequisites: COMT 1181
4.   Corequisites: None
5.   MnTC Goals: None.

This course will present advanced features of relational database including concurrency control, query optimization, distributed databases, and database administration. It will present many of the constructs of SQL (Structure Query Language), including queries, updates, and deletes. It will provide students with the tools and techniques for report generation.

B.   **Date last reviewed/updated:** January 2022

C.   **Outline of Major Content Areas**
1.   Transaction management and concurrency control
2.   Database performance tuning and query optimization
3.   Distributed databases
4.   Database administration
5.   Generating reports

D.   **Course Learning Outcomes**
Upon successful completion of the course, the student will be able to:
1.   Define a database transaction.
2.   Explain concurrency control and how it can be implemented.
3.   Identify and explain issues that affect database performance.
4.   Qualitatively analyze a query's performance.
5.   Analyze a distributed database solution.
6.   Administer user accounts in a database system.
7.   Explain the uses and limitations of XML.
8.   Design and create reports.
9.   Explain and demonstrate the use of SQL in building applications with tools such as VS.NET.

E.   **Methods for Assessing Student Learning**
The instructor will choose among various student-learning activities with corresponding assessments methods including, but not limited to:

1.   In-class and online testing.

2. Take-home testing.
3. Assignment work.
4. Quizzes.
5. Group or individual project work.
6. Peer evaluation.
7. Research project work.

F.   Special Information
None