COMMON COURSE OUTLINE

Course discipline/number/title: DSCI 2257: Programming Libraries of Analyzing Data

A.   CATALOG DESCRIPTION
1. **Credits: 3**
2. **Hours/Week: 3**
3. **Prerequisites (Course discipline/number):** COMP 1150
4. **Other requirements:** None
5. **MnTC Goals (if any):** NA

B.   COURSE DESCRIPTION: This course provides students additional exposure to Data Science. Students will learn how to explore machine learning techniques, manage large data sets and define methods for improving the performance of computerized statistical models.

C.   DATE LAST REVISED (Month, year): April, 2022

D.   OUTLINE OF MAJOR CONTENT AREAS:
1. Data analysis utilizing large data sets
2. Data warehouse retrieval
3. Machine learning
4. Parsing and normalization of data
5. Cleaning data
6. Data modeling
7. Model evaluation

E.   LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Assess and apply machine learning techniques.
2. Understand networked systems and topologies for data analysis.
3. Resource allocation best-practices to improve model performance.
4. Assess methods of data preparation.
5. Clean and tag data for machine learning models.
6. Evaluate models using large data sets.
7. Discuss solutions for supervised/unsupervised models.

F.   LEARNING OUTCOMES (MNTC): NA

G.   METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Tests
2. Lab Exercises
3. Programming Assignments
4. Comprehensive Final Exam

H.   RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

I.   SPECIAL INFORMATION (if any): None