Western Technical College

10196150 Machine Learning - Operations Management

Course Outcome Summary

Course Information

Description	This course begins by helping you reframe real-world problems in terms of supervised machine learning. Through understanding the “ingredients” of a machine learning problem, you will investigate how to implement, evaluate, and improve machine learning algorithms. You will explore a variety of machine learning algorithms and their uses in realistic scenarios.
Career Cluster	Manufacturing
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	54

Textbooks

No textbook required.

Success Abilities

1. Cultivate Passion: Increase Self-Awareness
2. Live Responsibly: Foster Accountability
3. Refine Professionalism: Act Ethically
4. Refine Professionalism: Improve Critical Thinking

Course Competencies

1. Use a microcontroller to gather data.

Assessment Strategies

1.1. Lab Demonstration

1.2. Written Exam (achieve 70% or higher)

Learning Objectives

1.a. Identify the inputs and outputs of various microcontrollers.
1.b. Build basic IOT circuits from diagrams.
1.c. Examine ways to send data (i.e. ITTT) over the internet.
1.d. Analyze the interface between the microcontroller and the PC.

2. Use Python fundamentals to analyze data.

Assessment Strategies

2.1. Lab Demonstration
2.2. Written Exam (achieve 70% or higher)

3. Use SQLite to analyze data.

Assessment Strategies

3.1. Lab Demonstration
3.2. Written Exam (achieve 70% or higher)

4. Apply basic statistical techniques to analyze and present data.

Assessment Strategies

4.1. Lab Demonstration
4.2. Written Exam (achieve 70% or higher)

5. Apply machine learning models to analyze data.

Assessment Strategies

5.1. Lab Demonstration
5.2. Written Exam (achieve 70% or higher)

6. Develop data storytelling techniques.

Assessment Strategies

6.1. Lab Demonstration
6.2. Written Exam (achieve 70% or higher)

Criteria

You will know you are successful when

6.1. you defend a proposition using data.
6.2. you defend a proposition using argumentation.
6.3. you defend a proposition using visualization tools.

7. Examine the architecture for Big Data and Data Engineering.

Assessment Strategies

7.1. Lab Demonstration
7.2. Written Exam (achieve 70% or higher)

Criteria

You will know you are successful when

7.1. you explain how data centers and data engineering contribute to Big Data and analytics.