**DIES 1650: Applied Failure Analysis**

**A. COURSE DESCRIPTION**

Credits: 2  
Lecture Hours/Week: 1  
Lab Hours/Week: 2  
OJT Hours/Week: *.*  
Prerequisites: None  
Corequisites: None  
MnTC Goals: None  

This introductory course covers the basic concepts and principles of failure analysis. It familiarizes the student with the procedures and road signs that lead to determining the root cause of a component or system failure. Students learn to understand the basic principles of metallurgy, wear, and fracture and apply these principles to engine components.

**B. COURSE EFFECTIVE DATES: 01/12/2015 - Present**

**C. OUTLINE OF MAJOR CONTENT AREAS**

1. Identify the eight steps of Applied Failure Analysis.  
2. Define the principles of metallurgy.  
3. Demonstrate necessary resources to aid in conducting an analysis of a failed component.  
4. Identify common industry component fractures.  
5. Identify common types of wear.  
6. Demonstrate Applied Failure Analysis principles to failed industry components.

**D. LEARNING OUTCOMES (General)**

1. The learner will demonstrate knowledge of the eight steps of applied failure analysis.  
2. The learner will demonstrate knowledge of proper identification of component failures.

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted