BARTON COMMUNITY COLLEGE
COURSE SYLLABUS

I. GENERAL COURSE INFORMATION

Course Number:
Course Title: Scale Principles and Technology
Credit Hours: 3
Prerequisites: None
Division/Discipline: Workforce Training and Economic Development/Weights and Measures
Course Description: This course is designed to provide students with the background necessary to understand the principles behind the functioning and design of both analog and digital weighing devices across all classes of scales. This is a required course for the Scale Technician Certificate

II. INSTRUCTOR INFORMATION

III. COLLEGE POLICIES

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. (Most up-to-date documents are available on the College webpage.)

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu.

IV. COURSE AS VIEWED IN THE TOTAL CURRICULUM

The scale industry is constantly evolving as technology changes and is a combination of analog (mechanical), digital, and analog/digital devices. Students working to become scale technicians must possess not only a basic understanding of metrology, the science of measurement, and the basic principles of weighing devices, but also the application of

weighing principles through analog and constantly evolving digital technologies. Students must also be aware of NIST (The National Institute of Standards and Technology) and its publications governing the scale industry, including but not limited to Handbook 44.

V. ASSESSMENT OF STUDENT LEARNING

Barton Community College is committed to the assessment of student learning at to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton as a learning college in finding ways to improve student learning.

Course Outcomes, Competencies, and Supplemental Competencies:

A. Demonstrate the proper usage of common scale terms and scale mathematics.
   1. Accurately convert between the various units of weights.
   2. Accurately determine the mathematics used in the scale industry as defined in the applicable sections of NIST Handbook 44 and Handbook 112 and use them to determine tolerances, minimum test loads, scale class, and other common usages.

B. Describe the concepts of scale type and accuracy.
   Accurately list and/explain the following:
   1. Concepts of scale types and accuracy.
   2. Classes of scales used in commerce and industry.
   3. Principles governing scale accuracy.
   4. The concepts of accuracy and acceptable tolerance and demonstrate their use in certifying scales.

C. Describe the principles of scale types.
   1. List the principles of analog (mechanical) scales and their application.
   2. Accurately list the principles governing the types and design of electronic weighing devices and their applications.
   3. List and accurately describe the types of electronic scales used in commerce and industry and their applications by type.

D. Demonstrate a working knowledge of NIST Handbook 44 as regards scales.
   1. Locate and cite relevant sections of NIST Handbook 44 to accurately explain and demonstrate scale capabilities to determine:
      a. The correct scale class and design based on intended use.
      b. Test procedures to determine proper scale function.
      c. Test procedures to determine scale accuracy during installation, regular maintenance, and after major repair of weighing mechanism.
      d. Determine user requirements for maintenance, permanence, and to remain in compliance with state regulations.

VI. INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS

VII. TEXTBOOKS AND OTHER REQUIRED MATERIALS

VIII. REFERENCES

IX. METHODS OF INSTRUCTION AND EVALUATION

X. ATTENDANCE REQUIREMENTS

XI. COURSE OUTLINE