**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

1. **GENERAL COURSE INFORMATION**

Course Number: MEAS 1107

Course Title: Gas Measurement Core Skills

Credit Hours: 3

Prerequisites: One or more of the following. ACT minimum test score of 17, Accuplacer minimum test score of 70, WorkReady/WorkKey minimum Level 4, MATH-1809 Basic Applied Math C or better.

Division/Discipline: Workforce Training & Community Education/Natural Gas Measurement

Course Description: This course enables the student to apply common technical concepts used in the gas measurement industry. Computer based and instructor led training are blended with hands on exercises to build a set of basic skills necessary to implement industry applied mathematics and physical laws necessary for advanced gas measurement training.

1. **INSTRUCTOR INFORMATION**
2. **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.

1. **COURSE AS VIEWED IN THE TOTAL CURRICULUM**

A foundation of relevant applied mathematics, laws of physics, and concepts pertaining to fluid dynamics and measurement technology is crucial as a foundation to facilitate further natural

gas measurement training. This course provides the groundwork to utilize relevant terminology, mathematics, and concepts found in advanced levels of gas measurement technician training.

1. **ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and 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:

1. Translate common units of measurement.
2. List and define absolute temperature scales.
3. Convert numbers to scientific notation.
4. Define units of energy, work and power.
5. Apply the rules and theorems of industry applied mathematics.
6. Convert fractions to decimals and percentages.
7. Solve applied algebraic and geometric equations.
8. Apply Ohm’s Law to basic circuits.
9. Calculate total resistance and current for series and parallel circuits.
10. Calculate wattage of series and parallel circuits.
11. List properties of natural gas.
12. Specify the components commonly found in natural gas.
13. Classify the differences in elements and compounds found in natural gas.
14. List type and applications of control valves.
15. Contrast different valve type functions.
16. List components of specified control valve types.
17. List types and applications of common gas measurement devices.
18. Define the function of orifice, turbine, positive displacement, diaphragm, coriolis vortex, and ultrasonic meters.
19. Define the basic gas laws that pertain to gas measurement and perform measurement calculations.
20. Apply Boyle’s Law, Charles Law, Avogadro’s Law, and the Ideal Gas Law in flow measurement.
21. Perform calculations for pressure, temperature, and volume.
22. **INSTRUCTOR’S EXPECTATIONS OF STUDENTS IN CLASS**
23. **TEXTBOOKS AND OTHER REQUIRED MATERIALS**
24. **REFERENCES**
25. **METHODS OF INSTRUCTION AND EVALUATION**
26. **ATTENDANCE REQUIREMENTS**
27. **COURSE OUTLINE**