**BARTON COMMUNITY COLLEGE**

##### COURSE SYLLABUS

## GENERAL COURSE INFORMATION

Course Number: MSCT 1102

Course Title: Precision Measurement and Quality Control
Credit Hours: 2
Prerequisite: None
Division and Discipline: Workforce Training and Community Education/Manufacturing Skills

Course Description: This course provides the study of basic measuring tools used in manufacturing today. This course will provide the student with proficiency through using and reading basic measuring devices.

###### INSTRUCTOR INFORMATION

###### 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.

## COURSE AS VIEWED IN THE TOTAL CURRICULUM

This course is one course that students complete in the pursuit of attaining the Manufacturing Skills Certification (MSC). This certificate curriculum was developed by the Kansas Institute for Technical Excellence (KITE) colleges in Kansas in collaboration with business and industry representatives within the manufacturing sector from the Central/South Central Kansas region.

## ASSESSMENT OF STUDENT LEARNING

Barton Community College assesses student learning at several levels: institutional, program, degree and classroom. The goal of these assessment activities is to improve student learning. As a student in this course, you will participate in various assessment activities. Results of these activities will be used to improve the content and delivery of Barton’s instructional program.

Upon completion of this course, the student will have an understanding of basic measuring tools that are utilized in fulfilling the manufacturing requirements of the job. This course is a practical efficient way to build skills. The student will master the most common gages on today’s production floor.

## Course Outcomes, Competencies, and Supplemental Competencies

1. Explain the concepts, terms and guidelines that are common to all measuring applications.
2. Define the terms accuracy, resolution or discrimination, reference point and measured point.
3. Utilize general tool care guidelines.
4. Define factors associated with taking accurate measurements.
5. Demonstrate the different types and use of steel rules.
6. Explain the purpose and use of hook rules.
7. Explain the typical applications of combination squares.
8. Explain how to use and read an inch depth gage.
9. Explain how to use an inch vernier depth gage.
10. Explain how to avoid common problems with depth gage positioning.
11. Demonstrate how to use simple inside and outside calipers.
12. Examine the main components of direct-reading calipers.
13. Outline common wear patterns of caliper jaws.
14. List how to use and read a vernier caliper.
15. List how to use and read an electronic caliper.
16. Read micrometers and dial indicators, discuss common types of micrometers, as well as dial indicators and several dial indicating gages.
17. Define typical applications and main components of outside micrometers.
18. Read inch and metric micrometers.
19. Utilize outside micrometers.
20. Identify applications and main components of standard inside micrometers.
21. Demonstrate use ofstandard inside micrometers.
22. Demonstrate use of and read jaw-type inside micrometers.
23. Demonstrate use of and read vernier micrometers.
24. Demonstrate use of electronic micrometers.
25. Explain the characteristics and applications of balanced dial indicators and continuous dial indicators.
26. Demonstrate use of dial calipers.
27. Demonstrate use of dial snap gages.
28. Demonstrate use of dial depth gages.
29. Explain the concepts of go/no go part evaluations and types of gages.
30. List how fixed gages differ from gages that provide numeric measurement readings.
31. Differentiate the advantages and disadvantages of fixed gages.
32. Discuss general handling procedures for fixed gages.
33. Demonstrate applications and components of snap gages.
34. Demonstrate the use of hand-held and mounted snap gages.
35. Demonstrate applications and types of plug gages.
36. Explain the limitations and uses of plug gages.
37. Demonstrate applications and types of ring gages.
38. Explain the limitations and uses of ring gages.
39. Demonstrate use of screw thread plug gages
40. Demonstrate use of thread ring gages.
41. Describe devices and techniques that are commonly used with surface plate inspections.
42. Demonstrate applications, characteristics and proper care of surface plates.
43. Define the purpose and characteristics of gage blocks.
44. Discuss how to select gage blocks to create a stack for desired dimension.
45. Discuss how to wring gage blocks
46. Demonstrate applications and components of typical height gages.
47. Demonstrate use of and read a vernier height gage.
48. Demonstrate use of a dial height gage.
49. Demonstrate use of an electrical height gage.
50. List the purpose and main components of micrometer height gage.
51. Demonstrate use of a micrometer height gage.
52. Demonstrate typical applications of v-block, parallel bars and right angle plates.

## INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS

## TEXTBOOKS AND OTHER REQUIRED MATERIALS

### REFERENCES

### METHODS OF INSTRUCTION AND EVALUATION

## ATTENDANCE REQUIREMENTS

## COURSE OUTLINE