ecc

STATE UNIVERSITY OF NEW YORK
ERIE COMMUNITY COLLEGE

COURSE SYLLABUS

Statement regarding disabilities:

Students with handicaps/disabling conditions should contact the course instructor regarding accommodations that might be made in classroom locations/arrangement, seating, audio-visual aids, etc.

General Information:

Course	IT210 – Metrology
Instructor	Daniel G. Driscoll
Contact info	E-mail: driscoll@ecc.edu
Credit hours	2 credit hours (1 hour lecture/1 hour 40 min lab/15 wks)
Class meetings	Room B315 A – Monday – 12:00 PM to 2:40 PM
Office hours	Part-time instructors have no scheduled office hours. The instructor for this course will be available to students as needed.

Course Information:

Course text	'Fundamentals of Dimensioning Metrology' 6th edition By Connie Dotson

Prerequisites MN/IT: None Basic shop math and drafting skills

Course Objectives:

1. Explain and demonstrate basic inspection techniques and apply basic shop math skills.
2. Use a variety of inspection instruments to obtain accurate measurements on machined components and verify that tolerances are in compliance with drawing and other specifications.
3. Explain gage policies and demonstrate gaging procedures. Include an overview of different gages and types.
4. Introduction of Geometric Dimensioning and Tolerancing (GD&T), including defining symbols and applications.
5. Provide students with different systems of linear measurement. Discussion of allowances and tolerances for inspection methods used.
6. Familiarize students with basic machine shop paperwork including data collection and inspection reports.
7. Blueprint reading – details, views, symbols, and drafting standards.
8. Metrology measurements – precision tools; selecting the right tool for the job; the role of 'feel' in using precision hand tools; the 10-1 rule; calibration procedures.

Class policy/organization

Attendance:

- Students are expected to attend all classes and to come to class prepared.
- Attendance will be taken every class. Missing a class will affect your final grade.
- Homework will be assigned weekly and will be accepted on the day it is due only. Missing a homework assignment will affect your final grade.
- Students are responsible for any information, content, assignments or announcements made from a missed class.
- Cell phone use is disruptive in a classroom setting and is not allowed during class. This includes text messaging and any other function that your device might be capable of. Please switch phones off.

Lectures:

Class lectures will focus on information relating to the text and other instructor supplied sources. Generally, one chapter of the text will be covered each week.

Homework/exams:

Homework assignments will be announced. These assignments are made to enhance the learning objectives discussed during the lectures. Homework is usually due in one week, at the next scheduled class. Homework will only be accepted on the day it is due.

Tests/major quizzes will be announced at least 2 weeks before the test/quiz will be given. These tests/quizzes will include practical, hands on measurement and the recording of the results. Tests will also include other questions in standard written format, multiple choice, T or F, etc. Unannounced short quizzes, which will also contribute to the final grade, will be given periodically throughout the semester.

Labs:

Students will be given lab project work throughout the course. Labs are designed to provide students the opportunity to gain valuable hands on experience with various metrology devices and precision hand tools. Actual blueprints and machined components from industry are used in every lab assignment. Written reports and inspection records/ checklists will be collected and graded at the conclusion of each lab session. Demonstrations will be given on the proper use of all lab equipment.

Lab topics and devices will include:

- Tolerance theory – basic concepts
- Non-precision measurement; scale, calipers and dividers
- Protractor, precision angle measurement
- Basic micrometers
- Specialized micrometers
- Vernier height gage and calipers
- Dial indicators
- Optical comparator
- Toolmaker's microscope
- Radius, telescoping, and small hole gages
- Gage pins

Grading:

Your final grade will be based upon:

Attendance, Homework & Class participation	15%
Lab reports	15%
Quizzes	10%
Test 1	30%
Test 2	30%
	100%

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