JEFFERSON COLLEGE

COURSE SYLLABUS

MTT116

DIMENSIONAL METROLOGY

3 Credit Hours

Revised by
Michael D. McKinney
August 16, 2012

Mary Beth Ottinger, Ph.D., Division Chair, Business & Technical Education
Dena McCaffrey, Ed.D., Interim Dean, Career & Technical Education
MTT116 Dimensional Metrology

I. CATALOG DESCRIPTION

A. Pre-requisite: MTH105 Industrial Math and Reading Proficiency

B. 3 Credit Hours

C. Dimensional Metrology is designed to develop dimensional measurement ability for skilled workers, inspectors, technicians, and for personnel entering a technical occupation. Measuring equipment and instruments used include: scales, micrometers, calipers, gage blocks, indicators, and production gages. Basic statistics, probability, and acceptance sampling are also covered. (S)

II. EXPECTED LEARNING OUTCOMES / ASSESSMENT MEASURE

<table>
<thead>
<tr>
<th>Students will use vocabulary peculiar to the trade</th>
<th>In-class discussion, homework, and quizzes</th>
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<tr>
<td>Students will learn how measurement is essential at many levels. (Skilled, production, and scientific)</td>
<td>Homework, blueprints, instructor observation, quizzes, and final exam</td>
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<tr>
<td>Students will explain why statistical control is based on measurements that have already been taken</td>
<td>Homework, statistical forms, instructor observation, quizzes, and final exam</td>
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<td>Students will construct statistical spreadsheets, and use it to predict what the future measurements will be</td>
<td>Homework, statistical spreadsheet, instructor observation, quizzes, and final exam</td>
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<td>Students will be able to use graduated scales within recognized limitations</td>
<td>Homework, instructor observation, quizzes, and final exam</td>
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<td>Students will read Vernier and dial instruments</td>
<td>Homework, instructor observation, quizzes, and final exam</td>
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<td>Students will read and use Micrometer and digital instruments</td>
<td>Homework, instructor observation, quizzes, and final exam</td>
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<tr>
<td>Students will read and use gage blocks and production gage instruments</td>
<td>Homework, instructor observation, quizzes, and final exam</td>
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III. OUTLINE OF TOPICS

A. Chapter 1 – Measurement and Metrology
B. Chapter 2 – Language and System of Measurement
C. Chapter 3 – Measurement and Tolerances
D. Chapter 4 – Statistics and Metrology
E. Chapter 5, 6- Measurement with graduated scales and scaled instruments, Vernier Instruments
F. Chapter 7 – Micrometer Instruments
G. Chapter 8 – Development and use of Gage Blocks
H. Chapter 9 - Measurement by Comparison
I. Chapter 10 – High Amplification Comparators
J. Chapter 12 – Calibration
K. Chapter 14 – Reference Planes
L. Chapter 15 – Angle Measurement
M. Chapter 16, 17, 18 – Surface Measurement, Optical, CMM

IV. METHOD(S) OF INSTRUCTION

A. Lecture
B. Discussion
C. Lab

V. REQUIRED TEXTBOOK(S)

VI. REQUIRED MATERIALS

A. Textbooks
B. Pencil
C. Calculator

VII. SUPPLEMENTAL REFERENCES

None

VIII. METHOD OF EVALUATION

A. Homework 40%
B. Attendance 20%
C. Final Examination 20%
D. Quizzes, Test 20%

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College website, http://www.jeffco.edu).

XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.
XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.