Mechanical Measurement and Instrumentation (ETM 1010C)

Instructor: Alessandro Anzalone, Ph.D.
Class Location: BSSB 218
Class Time: Tuesdays and Thursdays 9:30am to 12:15am
Office Hour: Mondays 10:00am to 12:00m, other times by appointment
Office: BSSB 213e
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Course Description:

This course provides the basic foundation for mechanical measurement techniques used in manufacturing environments. The course will integrate the concepts, principles and techniques of mechanical measurement with the use of various types of instruments including micrometers, calipers, height gages, and other types of measuring equipment.

Course Outcomes:

1. The student will demonstrate an understanding of the concepts of measurement and metrology.
2. The student will demonstrate and understanding of the basic features of measurement, gaging, and tolerances.
3. The student will demonstrate an understanding of the language and systems of measurement.
4. The student will demonstrate and understanding of the process of measurement with graduated scales and scaled instruments.
5. The student will demonstrate an understanding of vernier instruments.
6. The student will demonstrate an understanding of micrometer instruments.

Textbook and Materials:

Fundamentals of Dimensional Metrology, 5th edition, Connie L. Dotson. Copyright 2006, Thomson Delmar Learning, ISBN: 978-1-4180-2062-0.

Instructional Methods (including Examination Policies):

This course combines traditional lecture with hands-on laboratory experiences. Students will be evaluated with a midterm, a class project, and a final exam.

1. Unexcused absences on test day will receive a zero for that test.
2. Tests will be closed book closed notes. Reference materials will be provided if required.
3. Tests will be short answer, T/F, multiple choices, and some problems.
4. Please contact me by email or phone if at all possible before the time of the test (leave a voice message) in the event you have to miss a test.
5. No retests will be given for any exams that have been taken.
6. Every student will be required to take the final exam.

7. Make up tests from excused illnesses must be made up within 2 weeks of the absence and the test may be of a different format than the class test.
8. If you are auditing this class, it must be declared at registration.
9. Some work will be competency-based and assessed accordingly.

Grading System: The final grades will be determined on the following basis:

90 - 100 A
80- 89 B
70 - 79 C
60 - 69 D
0 - 59 F

Academic Dishonesty Policy: All parties identified as cheating or plagiarizing on an exam, project or assignment will be assigned a grade zero on that item and subject to academic discipline in accordance with HCC policy.

Attendance Policy: It is important that you attend every class period and be on time. Missing class means that you miss some important material. Since this course is a cumulative experience, you will put yourself at an extreme disadvantage.

1. It is your responsibility to sign the attendance sheet provide at every class meeting.
2. If you are absent, it is your responsibility to get announcements, materials, and assignments before the next class period.
3. More than 3 absences per semester are considered excessive and will result in points taken off your final grade for the unexcused absences after the third absence. Please note that excused absences must be documented and may be death or illness of family members, personal illness, military duty, car trouble, etc.

Request for Accommodation: Any student whose disability falls within the American Disabilities Act (ADA) and requires accommodations should contact the Office of Services for Students with Disabilities. The Brandon office is located in the Student Services Building Room 109. You may also reach the office by phone at (813) 253-7914. Requests for accommodations should be submitted to the instructor within the first two weeks of the course.

Religious Observances: HCC will reasonably accommodate the religious observances, practices, and beliefs of students in its admissions, class attendance, and examination policies and work assignments. Students must notify instructors at least one week prior to a religious observance.

Recording of Class Sessions: A student shall not, without my express authorization, make or receive any recording, including but not limited to audio and video recordings, of any class, co-curricular meeting, organizational meeting, or meeting with me. Further, it is not permissible to post my class lectures/course materials on the web.

Equity/Equal Access Policy: Hillsborough Community College is an equal access/equal opportunity employer that makes employment and education-related decisions without regard to race, color, gender, religion, national origin, age, disability, sexual orientation, marital status or any other bias that is or may be prohibited by laws. In addition, the college does not discriminate in employment practices or in the admission and treatment of students. HCC is committed to equitable treatment for all students and employees and to a learning and working environment free of discrimination and harassment for current as well as future students and employees. The college provides equal educational opportunities for qualified individuals with disabilities and complies with, as well as, supports the Americans with Disabilities Act. HCC's Equity Officer ensures compliance with federal and state laws prohibiting discrimination and sexual harassment. Employees and students who believe they have been a victim of discrimination or sexual harassment should contact: Dr. Joan B. Holmes, Special Assistant to the President for Equity and Special Programs, District Administrative Offices, 39 Columbia Drive, Room 718, Tampa, FL 33606, Telephone: 813-253-7043, email: jholmes16@hccfl.edu.

Class Schedule

Date	Chapter	Assignment
01/11	Introduction	Read Chapter 1
01/13	Chapter 1: Measurement and Metrology	Read Chapter 2
01/18–01/20	Chapter 2: Language and Systems of Measurement	Read Chapter 3
01/25	Chapter 3: Measurement and Tolerances	Read Chapter 4
01/27-02/01	Chapter 4: Statistics and Metrology	Read Chapter 5
02/03-02-08	Chapter 5: Measurement with Graduated Scales and Scaled Instruments	Read Chapter 6
02-10-02/15	Chapter 6: Vernier Instruments	Read Chapter 7
02/17-03/01	Chapter 7: Micrometer Instruments	Read Chapter 8
03/03-03/08	Chapter 8: Development and Use of Gage Blocks	Study for Midterm
03/10	**Midterm**	Read Chapter 9
03/15-03/17	Chapter 9: Measurement by Comparison	Read Chapter 10
03/22-03/24	Chapter 10: High-Amplification Comparators	Read Chapter 11
03/29-03/31	**Spring Break (no class)**	
04/05-04/07	Chapter 11: Pneumatic Measurement	Read Chapter 14
04/12-04/19	Chapter 14: Reference Planes	Read Chapter 15
04/21-04/26	Chapter 15: Angle Measurement	Read Chapter 16
04/28	Chapter 16: Surface Measurement	Read Chapter 17
05/02	Chapter 17: Coordinate Measuring Machines	Study for Final Exam
05/05	**Final Exam**	

This Class Schedule is subject to change.