

**COURSE:** MATH 1024 Mathematics of Measurement

**INSTRUCTOR:**

**CREDITS:** 2

**CLASS HOURS PER WEEK:** 3 (1 lecture, 2 lab)

**PREREQUISITES:** Placement score of 26 or higher (or cougar edge equivalent), or C or better in MATH 0114, or permission of program

**DESCRIPTION OF COURSE:**

MATH 1024 is a developmental level mathematics course designed specifically as a prerequisite for MATH 1101 and MATH 1115. MATH 1024 introduces the fundamentals of measurement, including the operation of tools for obtaining measurements. MATH 1024 provides an elementary understanding of the basic structure of measurements including types, arithmetic, accuracy, precision, representations, and application of measurements.

**STUDENT LEARNING OUTCOMES:**

**Unit 1: Linear Measurements**

1.1: What is Linear Measurement?

- Students will understand the definition of a linear measurement.

1.2: Decimal Review

- Students will understand the connections between decimals and linear measurement.

1.3: Fraction Review

- Students will understand the connections between fractions and linear measurement.

1.4: Unit Systems: English

- Students will be able to convert measurements within the English system.

1.5: Obtaining English Measurements

- Students will be able to find measurements within the English system using rulers, micrometers, and calipers.

1.6: Unit Systems: Metric

- Students will be able to convert measurements within the Metric system.

1.7: Obtaining Metric Measurements

- Students will be able to find measurements within the metric system using rulers, micrometers, and calipers.

1.8: Conversion between Systems

- Students will be able to convert measurements between systems.

1.9: Ratios and Proportions

- Students will be able to use ratios and proportions.

## **Unit 2: Angular Measurements**

### 2.1: What is Angular Measurement?

- Students will understand the definition of angular measurement.

### 2.2: Obtaining Angular Measurements

- Students will be able to find angles and create angles using a protractor.

### 2.3: Unit Systems: Degrees (DMS)

- Students will understand the degree-minute-second system.

### 2.4: Arithmetic of Angular Measurements

- Students will be able to perform arithmetic with angular measurements.

### 2.5: Conversion between Systems

- Students will be able to convert angular measurements between systems.

## **Unit 3: Two Dimensional Linear Measurements**

### 3.1: Linear Equation Review

- Students will be able to solve basic linear equations.

### 3.2: Formula Rearrangement

- Students will be able to solve for the given variable.

### 3.3: Rectangular Coordinate System

- Students will understand 2-dimensional rectangular coordinates.

### 3.4: Pythagorean Theorem

- Students will be able to apply the Pythagorean Theorem to calculate distances.

## **Unit 4: Geometry of Measurements**

### 4.1: 2D Shapes – Rectangle, Triangle, Polygon, Circle

- Students will understand basic 2-dimensional measurement properties.

### 4.2: 3D Shapes – Prisms, Cylinders, Polyhedron

- Students will understand basic 3-dimensional measurement properties.

## **INSTITUTIONAL LEARNING GOALS:**

Columbus State Community College's Institutional Learning Goals are an integral part of the curriculum and central to the mission of the college. For this course, students are expected to demonstrate the skills associated with the Institutional Learning Goals identified below:

Critical Thinking

Quantitative Skills

Communication Competence

In class, students are assessed on achievement of these outcomes. Names will not be used when reporting results. Outcomes-based assessment is used to improve instructional planning and design and the quality of student learning throughout the college.

**COURSE MATERIALS REQUIRED:**

- Scientific Calculator
  - TI-30XS Multiview – or other type of calculator
- Computer/internet access
- Protractor
- Ruler (marked in inches and centimeters)
- Paper
- Adobe Scan (or other PDF scanning app)

**TEXTBOOK, MANUALS, REFERENCES, AND OTHER READINGS:**

- All materials provided in the Blackboard course

**GENERAL INSTRUCTIONAL METHODS:**

This course may include a variety of instructional methods including, but not limited or restricted to: on-line notes and practice exercises, interactive web applications, lesson videos, discussion boards, hands-on activities, and Excel labs. ALTERNATE FORMAT: Virtual Weekly Class Meetings using Blackboard Collaborate, & labs/homework/quizzes/final submitted via Blackboard Assignments

**STANDARDS AND METHODS FOR EVALUATION:**

This course may include a variety of assessment methods including, but not limited or restricted to: exercises, labs, quizzes, tests, exams, and projects.

**GRADE SUMMARY:**

4 Quizzes (20 points/quiz) = 30%

Final Exam (40 points) = 30%

Homework and Lab assignments = 40%

**GRADING SCALE:**

90% - 100% = A

80% - 89% = B

70% - 79% = C

60% - 69% = D

0% - 59% = E/EN

**\*\*E:** Student earned less than 60% average and attempted a significant portion of the assignments.

**\*\*EN:** Student earned less than 60% average and did NOT attempt a significant portion of the assignments.

**ATTENDANCE POLICY:**

Attendance is required. The specific policy for this course is listed on your blackboard shell and course contract.

**STUDENT CODE OF CONDUCT:**

As an enrolled student at Columbus State Community College, you have agreed to abide by the Student Code of Conduct as outlined in the Student Handbook. You should familiarize yourself with the student code. The Columbus State Community College expects you to exhibit high standards of academic integrity, respect and responsibility. Any confirmed incidence of misconduct, including plagiarism and other forms of cheating, will be treated seriously and in accordance with College Policy and Procedure 7-10.

**AMERICANS WITH DISABILITIES ACT (ADA) POLICY:**

It is Columbus State policy to provide reasonable accommodations to students with disabilities as stated in the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act. If you would like to request such accommodations for access, please contact Disability Services: 101 Eibling Hall, (614) 287-2570. Email or give your Instructor a copy of your accommodations letter from Disability Services as soon as possible. Accommodations do not start until the letter is received, and accommodations are not retroactive.

Delaware Campus students may contact an Advisor in the Student Services Center on the first floor of Moeller Hall, (740) 203-8000.

**Math Department Diversity, Equity, and Inclusion (DEI) Statement:**

The CSCC Mathematics Department faculty value diversity of thought, perspective, and experience, and respect your identities (including but not limited to race, gender identity or expression, class, sexual orientation, religion, and ability). The education, rights, and well-being of all students are encouraged and cultivated. Our goal is to foster and support safe and inclusive learning environments with equitable opportunities for all students to participate, contribute, and succeed.

**AUDIO/VIDEO RECORDING OF CLASS:**

Audio-and video-recording of class content, transmission, and distribution of class content (eg. lectures, discussions, demonstrations, etc.) is strictly prohibited unless written permission has been provided by the course instructor via the syllabus, or a signed form. Authorization to record extends solely to students in that particular course. Transmitting, sharing, or distributing course content onto public sites, commercial sites, or social media sites is strictly prohibited (effective SU 2015).

**TITLE IX STATEMENT:**

Columbus State Community College is committed to creating a learning and working environment that is free of bias, discrimination, and harassment by providing open communication and mutual respect. If you have encountered sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, ancestry, sex, sexual orientation, gender identity and expression, genetic information (GINA), military status or disability, or for additional information about your options at Columbus State Community College or to file a complaint online, please visit our webpage at <http://www.csc.edu/services/title-ix/>

**INCLEMENT WEATHER OR OTHER EMERGENCIES:**

In the event of severe weather or other emergencies which could force the college to close or to cancel classes, such information will be broadcast on radio stations and television stations. Students who reside in areas which fall under a Level III emergency should not attempt to drive to the college even if the college remains open.

Assignments due on a day the college is closed will be due the next scheduled class period. If an examination is scheduled for a day the campus is closed, the examination will be given on the next class day. Students who miss a class because of weather-related problems when the class is held as scheduled are responsible for readings and other assignments as indicated on the syllabus.

**COVID CONTINGENCY PLANS**

As Covid continues to be a threat, there are some contingency plans in place for this course. Any changes to class meetings will be announced in the Announcements section of Blackboard (Bb). Students are expected to check Bb Announcements prior to attending class.

If the instructor becomes sick and is unable to arrange for a substitute, the class may move to an online format until the instructor can find a substitute or is able to return to class.

If a Covid outbreak occurs in this class, this section may need to move to an online format until students are cleared to resume regular class attendance.

If a strong resurgence of Covid occurs campus wide, this may force the class to change to an online format. In this event, the course would be held using live-online lectures during our scheduled days/times, and assignments would be submitted electronically. The instructor will provide further details on course expectations affected by the change in format.

**FINANCIAL AID ATTENDANCE REPORTING**

Columbus State is required by federal law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through the Department of Veteran's Affairs. It is the responsibility of the College to identify students who do not commence attendance or who stop attendance in any course for which they are registered and paid. Non-attendance is reported each term by each instructor, and results in a student being administratively withdrawn from the class section. Please contact the Financial Aid Office for information regarding the impact of course withdrawals on financial aid eligibility.

For the purposes of financial aid reporting, a student meets the participation and attendances criteria if s/he has actively engaged in the class and demonstrated a meaningful attempt toward completion of the course. Please refer to your individual instructor's attendance policy for further details.

## **STUDENT RESOURCES, RIGHTS AND RESPONSIBILITIES**

Columbus State Community College required College Syllabus Statements on College Policies and Student Support Services can be found at [www.csc.edu/syllabus](http://www.csc.edu/syllabus) or on the College website Quick Links “Student Resources, Rights, and Responsibilities.”

## **COLLEGE SYLLABUS STATEMENTS**

Columbus State Community College-required College Syllabus Statements on College Policies and Student Support Services can be found at [www.csc.edu/syllabus](http://www.csc.edu/syllabus), or on the college website Quick Links “Syllabus Statements.” Some of the CSCC syllabus statements may be included on the syllabus for the course, but the link will lead you to the most complete and updated information. Please read all of the information at this site to ensure that you are aware of campus services, your rights, and your responsibilities. (In the event that information has changed since the creation of the course syllabus, the information on the website supersedes that on the syllabus: <http://www.csc.edu/academics/syllabus.shtml>.)

## **LEAD INSTRUCTORS**

This course is departmentalized, and each individual instructor is required to adhere to the same standards as described in this syllabus. If after contacting the instructor assigned to your course you have questions or concerns about these standards, you may contact the lead instructors listed below.

Jennifer Dragoo  
AQ 227  
[jdragoo@csc.edu](mailto:jdragoo@csc.edu)

## UNITS OF INSTRUCTION

### Week 1

- **Unit of Instruction: Unit 1** - Course Introduction, Calculator Competency, Decimal Review
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read sections 1.1 & 1.2; Homework Section 1.1
- **Assessment Methods:** Group activities/Labs & Homework Completion

### Week 2

- **Unit of Instruction: Unit 1** - Fraction Review, What is Linear Measurement?
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 1.3 & 1.4; Homework Section 1.2
- **Assessment Methods:** Group activities/Labs & Homework Completion

### Week 3

- **Unit of Instruction: Unit 1**- Unit Systems: English, Obtaining English Measurements - Rulers
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Section 1.5; Homework Sections 1.4 & 1.5 on Rulers
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 1**

### Week 4

- **Unit of Instruction: Unit 1** - Obtaining English Measurements (cont.) - Micrometers
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Homework Section 1.5 on Micrometers
- **Assessment Methods:** Group activities/Labs & Homework Completion

### Week 5

- **Unit of Instruction: Unit 1** - Obtaining English Measurements (cont.) – Calipers, Unit Systems: Metric
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 1.6 & 1.7; Homework Section 1.7
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 2**

### Week 6

- **Unit of Instruction: Unit 1** - Obtaining Metric Measurements – Rulers and Micrometers
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Homework Section 1.7 on Rulers & Section 1.7 on Micrometers
- **Assessment Methods:** Group activities/Labs & Homework Completion

### **Week 7**

- **Unit of Instruction: Unit 1** – Obtaining Metric Measurements (cont.) – Calipers, Conversion between systems (English and Metric)
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Section 1.8; Homework Section 1.8
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 3**

### **Week 8**

- **Unit of Instruction: Unit 1** - Conversion between systems (English and Metric) (cont.), Ratios and Proportion
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 1.9, 2.1 & 2.2; Homework Sections 1.8 & 1.9
- **Assessment Methods:** Group activities/Labs & Homework Completion

### **Week 9**

- **Unit of Instruction: Unit 2** – What is Angular Measurement?, Obtaining Angular Measurements
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Section 2.3; Homework Section 2.2 (2 assignments)
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 4**

### **Week 10**

- **Unit of Instruction: Unit 2 - Unit Systems:** Degrees/Minutes/Seconds, Arithmetic of Angular Measurements
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 2.4 & 2.5; Homework Sections 2.3 & 2.4
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 5**

### **Week 11**

- **Unit of Instruction: Unit 2 & Unit 3** – Conversion between Systems (Degrees and Radians), Linear Equations – a Review
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 3.1, 3.2; Homework Sections 2.5 & 3.1
- **Assessment Methods:** Group activities/Labs & Homework Completion

### **Week 12**

- **Unit of Instruction: Unit 3** – Formula Rearrangement, Rectangular Coordinate System
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 3.3 & 3.4; Homework Sections 3.2 & 3.3
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 6**



**Week 13**

- **Unit of Instruction: Unit 3** – Pythagorean Theorem
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Section 4.1; Homework Section 3.4
- **Assessment Methods:** Group activities/Labs & Homework Completion

**Week 14**

- **Unit of Instruction: Unit 4** – 2D Shapes (Rectangles, Triangles, Polygons, Circles), 3D Shapes (Prisms, Cylinders, Polyhedron)
- **Learning Objective/Goals:** Critical Thinking, Quantitative Skills & Communication Competence
- **Assignment:** Read Sections 4.2 & 5.1; Homework Sections 4.1 & 4.2
- **Assessment Methods:** Group activities/Labs & Homework Completion and **Quiz 7 & 8**