ATMT-1812: SPECIAL TOPICS-INDUSTRIAL APPLICATIONS

Cuyahoga Community College

Viewing: ATMT-1812 : Special Topics-Industrial Applications

Board of Trustees:
JUNE 2026

Academic Term:
Fall 2026

Subject Code
ATMT - Appd Ind Tech-ManufacturingTec

Course Number:
1812

Title:
Special Topics-Industrial Applications

Catalog Description:
This course covers basic measurement, formulas, and functions typically encountered within an industrial environment.

Credit Hour(s):
3

Lecture Hour(s):
3

Outcomes

Course Outcome(s):
Apply fundamental arithmetic, algebraic, and statistical methods to solve practical mathematical problems commonly encountered in industrial and shop environments.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Calculate solutions by adding, subtracting, multiplying, and dividing whole and mixed numbers
2. Calculation solutions by adding, subtracting, multiplying, and dividing common and decimal fractions
3. Convert percentages to decimals and decimals to percentages
4. Solve shop problems using averaging and estimating
5. Solve practical shop application problems requiring statistical measurement
6. Use a hand-held calculator for solving shop math problems
7. Solve shop math problems requiring the use of powers and roots
8. Use signed numbers.
9. Apply the mathematical order of operations
10. Solve equations and apply formulas

Course Outcome(s):
Use measurement systems, geometric, and trigonometric concepts, and technical data representations to analyze and solve applied industrial mathematics problems.

Objective(s):
1. Analyze graphs and tables used in technical written materials and reports.
2. Identify Standard English and Metric units of linear measure.
3. Solve practical shop applications requiring surface area measurement.

4. Solve practical shop applications involving volume and cubic measurement.
5. Solve practical shop applications of metric and metric conversions.
6. Apply geometric formulas.
7. Use trigonometric functions in applied problems.

Methods of Evaluation:

1. Assignments
2. Participation
3. Attendance
4. Exams

Course Content Outline:

1. **Fundamental Number Operations**
   a. Operations with whole and mixed numbers
   b. Operations with common and decimal fractions
   c. Signed numbers
   d. Order of operations
2. **Percentages and Conversions**
   a. Converting percentages to decimals
   b. Converting decimals to percentages
3. **Estimation, Averaging, and Statistics**
   a. Averaging and estimating in shop problems
   b. Statistical measurement in practical applications
4. **Graphs, Tables, and Technical Data**
   a. Interpreting graphs used in technical reporting
   b. Analyzing tables used in technical reporting
5. **Mathematical Tools and Computation**
   a. Using a hand-held calculator
   b. Powers and roots
6. **Measurement Systems**
   a. Standard English and Metric units of linear measure
   b. Metric conversions
7. **Geometry and Measurement Applications**
   a. Geometric formulas
   b. Surface area measurement
   c. Volume and cubic measurement
8. **Algebraic and Trigonometric Applications**
   a. Equations and formulas
   b. Trigonometric functions

Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: https://portal2.tri-c.edu/ReligiousAccommodation/ Religious Accommodation Form. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf

Weekly Schedule

	Topics
Week 1	Course Introduction and Review of Basic Math
Week 2	Whole Numbers and Mixed Numbers
Week 3	Common Fractions
Week 4	Decimal Fractions
Week 5	Signed Numbers and Order of Operations
Week 6	Percentages
Week 7	Estimation and Averaging
Week 8	Statistics in Shop Applications
Week 9	Midterm Review and Midterm Exam
Week 10	Graphs and Tables
Week 11	Calculator Use, Powers, and Roots
Week 12	Measurement Systems and Metric Conversions
Week 13	Geometric Formulas
Week 14	Surface Area and Volume
Week 15	Equations and Trigonometric Functions
Week 16	Final Review and Final Exam

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Required/Recommended Readings
Instructor-provided materials

Resources for the Instructor

Roberta Laine. *New Practical Mathematics for Metalworking Trainees*, National Tooling and Machining Association. https://ntma.org/

Additional Resources for the Instructor
https://ntma.org/
https://ntma.org/training-and-education/

Top of page
Key: 4687