

JEFFERSON COLLEGE
COURSE SYLLABUS

MTH105

INDUSTRIAL MATH

3 Credit Hours

Revised by: Skyler Ross
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MTH105 Industrial Math

I. CATALOG DESCRIPTION

- A. Course pre-requisites/co-requisites:: Reading Proficiency
- B. 3 semester credit hours
- C. Industrial Math provides students with the practical mathematical skills needed for a variety of trades and occupations, focusing on the application of these skills to specific areas such as; allied health, automotive trades, manufacturing, electronics, etc. Skills covered include; numerical computation, plane and solid geometry, basic algebra, triangle trigonometry, and statistics. (F,S)
- D. Fulfills Mathematic Sciences for select AAS degrees (Applied Technology, Apprenticeship Training, Automotive Technology, Business Management, Child Care / Early Childhood Education, Computer Information Systems, Computer Integrated Manufacturing, Culinary Arts, Emergency Medical Technology, Heating, Refrigeration, and Air Conditioning Technology, Criminal Justice – Law Enforcement Academy, Welding Technology) general education requirement, NOT part of MOTR CORE 42.
Fulfills AAS – Automotive Technology degree requirement.
Fulfills AAS – Computer Integrated Manufacturing degree requirement.
Fulfills AAS – Heating, Refrigeration, and Air Conditioning Technology degree requirement.
Fulfills AAS – Welding Technology degree requirement.

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

Note: Each of the following learning outcomes will be measured on at least one in-class exam, but instructors are encouraged to assess them with additional measures, including homework, quizzes, and/or projects.

Expected Learning Outcomes	Assessment Measures
Perform arithmetic computations, following the order of operations using; whole numbers, fractions, decimals (quick review), and scientific notation	Class discussions, quizzes, and exams
Perform computations with units and convert units within and between the U.S. Customary and Metric Systems	Class discussions, quizzes, and exams
Make accurate measurements with measurement tools commonly used in the trades	Class discussions, quizzes, and exams
Perform computations using formulas, and rearrange formulas into alternate forms	Class discussions, quizzes, and exams

Compute perimeters, areas, surface areas, and volumes of plane and solid figures	Class discussions, quizzes, and exams
Solve problems involving percent, ratio, and proportion	Class discussions, quizzes, and exams
Solve algebraic equations including linear and quadratic, and solve systems of equations	Class discussions, quizzes, and exams
Solve problems involving right and oblique triangles by using trigonometric ratios	Class discussions, quizzes, and exams
Communicate information graphically and use measures of central tendency to solve problems involving data sets	Class discussions, quizzes, and exams
Translate numbers between decimal, binary, and hexadecimal representations - Optional	Class discussions, quizzes, and exams

III. OUTLINE OF TOPICS

- A. Arithmetic with Whole Numbers
- B. Arithmetic with Fractions
- C. Measurement Tools (supplemental)
- D. Arithmetic with Decimal Numbers
- E. Ratio, Proportions, and Percent
- F. Measurement: English and Metric
- G. Beginning Algebra (evaluating, simplifying and working with algebraic expressions)
- H. Intermediate Algebra (quadratic equations and systems of equations)
- I. Practical Plane Geometry
- J. Solid Figures
- K. Fundamentals of Trigonometry
- L. Statistics
- M. Binary and Hexadecimal Numbers (supplemental)

IV. METHODS OF INSTRUCTION

- A. Lecture and Discussion
- B. In-Class Activities
- C. MyMathLab Interactive Assignments

V. REQUIRED TEXTBOOKS

- A. Saunders and Carman, Mathematics for the Trades, current edition. Boston: Pearson
- B. MyMathLab Student Access Kit. Boston: Pearson

VI. REQUIRED MATERIALS

- A. Scientific Calculator – Texas Instruments – TI30XIIB
- B. Protractor

VII. SUPPLEMENTAL REFERENCES

- A. Available on-campus
 - 1. Math Lab (Hillsboro, Arnold, and Online)
 - 2. Peer tutoring
- B. Available online within MyMathLab
 - 1. Study plan
 - 2. Section videos
 - 3. Pearson Tutor Services (30 minutes free, additional time at cost)

VIII. METHODS OF EVALUATION

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|--------------------------------------|-----|
| A. Tests | 50% |
| B. Quizzes | 20% |
| C. Homework/Attendance/Participation | 10% |
| D. Final Exam | 20% |

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Technology Center 101; 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.