# CONESTOGA

# COURSE OUTLINE

**Course**    Math Fundamentals (2021-2022)

**Code / Version**    MATH1435 (100)

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**Total Hours**    28

**Credits**    2

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**PreRequisite(s)**

**CoRequisite(s)**

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## Course Description

This course will provide the student with learning tools that will help them to improve their basic mathematic skills and also develop reasoning and problem solving skills. The student will also develop an understanding of the mathematics used in the woodworking industry.

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**PLAR Eligible:** Yes

**Eligible for Supplemental:** No

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## Resources

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## Course Outcomes

Successful completion of this course will enable the student to:

1. Use a scientific, graphic or business calculator to solve mathematical problems involving the applicable topics in the following objectives.
2. Solve mathematical problems involving whole numbers, exponents, roots, order of operations, common fractions and mixed numbers.
3. Solve mathematical problems involving decimal fractions and SI units of measurement.
4. Convert common fractions to decimal fractions and vice versa in any order.
5. Solve mathematical problems involving percent.
6. Solve problems involving algebraic expressions and linear equations; use linear equations to solve practical problems.
7. Solve problems involving ratio and proportion.

| Essential Employability Skills addressed in this course | | Taught | Reinforced | Assessed |
|---|---|:---:|:---:|:---:|
| Communication | • Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience | | X | |
| | • Respond to written, spoken, or visual messages in a manner that ensures effective communication | | X | |
| Numeracy | • Execute mathematical operations accurately | X | | X |
| Critical Thinking and Problem Solving | • Apply a systematic approach to solve problems | X | | X |
| | • Use a variety of thinking skills to anticipate and solve problems | X | | X |
| Information Management | • Locate, select, organize, and document information using appropriate technology and information systems | | | |
| | • Analyze, evaluate, and apply relevant information from a variety of sources | | | |
| Interpersonal | • Show respect for the diverse opinions, values, belief systems, and contributions of others | | | |
| | • Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals | | | |

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|---|---|---|---|---|
| Personal | • Manage the use of time and other resources to complete projects | X | | |
| | • Take responsibility for one's own actions, decisions, and consequences | | | |

## Unit Outcomes

Successful completion of the following units will enable the student to:

1.0 Calculator

  1.1  Use a calculator (scientific, business) to solve problems for the assigned objectives.

  1.2  Use mental estimation as a device for checking calculator work.

2.0 Whole Numbers and Fractions

  2.1  Perform fundamental operations with whole numbers.

  2.2  Perform operations involving exponents, roots, factors and order of operations.

  2.3  Identify the basic concepts of fractions.

  2.4  Add and subtract fractions and mixed numbers.

  2.5  Multiply and divide fractions and mixed numbers.

3.0 Decimals and Metric Systems

  3.1  Perform operations and solve problems involving decimals fractions.

  3.2  Estimate and measure using Metric and Imperial units.

  3.3  Convert and solve problems involving Metric units of length.

  3.4  Convert and solve problems involving Metric units of area, volume and mass.

4.0 Percent

  4.1  Change common fractions, decimals and percent to equivalent forms.

  4.2  Solve the three basic types of percent problems.

5.0 Algebraic Expressions, Linear Equations and Word Problems

  5.1  Add and subtract algebraic expressions.

  5.2  Solve linear equations in one unknown and verify answers.

  5.3  Multiply algebraic expressions.

6.0 Ratio and Proportions

  6.1  Perform operations with rates and ratios.

  6.2  Solve problems using direct proportion.

  6.3  Solve problems using inverse proportion.

7.0 Wood Related Calculations

  7.1  Solve calculations including board foot and square foot.

  7.2  Perform calculations for glue usage and waste.

8.0 Machine Calculations

  8.1  Apply formulas to calculate knife marks per inch and revolutions per minute (RPM).

  8.2  Apply formulas to calculate rim speeds and pulley ratios.

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9.0    Documentation

     9.1      Create route sheets.

     9.2      Calculate costs for bill of materials.

     9.3      Create finish specifications.

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## Evaluation

The minimum passing grade for this course is 55 (D).

In order to successfully complete this course, the student is required to meet the following evaluation criteria:

| Description | Quantity | Percentage |
|---|---|---|
| 1. Assignment(s) | 2 | 30.00 % |
| 2. Test(s) | 2 | 40.00 % |
| 3. Final Exam | 1 | 30.00 % |
| | | 100.00 % |

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## Web-based Tools

This course may be using web-based services with data centres outside of Canada. Students may be expected to complete assessments where information is transmitted outside of Canada. Students who do not wish to submit their information to other countries have the right to opt-out. It is the responsibility of the student to notify the instructor in the first week of term if they have any concerns. The alternative may require the student to attend the campus testing centre at a designated time.

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## Notes

Academic integrity is expected and required of all Conestoga students. It is a student's responsibility to maintain compliance with Conestoga's Academic Integrity Policy at all times.

Conestoga College is committed to providing academic accommodations for students with documented disabilities.

An Instructional Plan will be available at the beginning of the course and will be referred to in conjunction with this course outline.

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**School**    Engineering & Technology

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**Date**      2021-07-28                 © Conestoga ITAL