SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

CICE COURSE OUTLINE

COURSE TITLE: Trades Mathematics

CODE NO. : MTH106 **SEMESTER:** Fall
MODIFIED CODE: MTH0106

PROGRAM: Construction Carpentry, Home Construction

AUTHOR: Mathematics Department
MODIFIED BY: Natalie Kaldma, Learning Specialist CICE Program

DATE: Sept/2016 **PREVIOUS OUTLINE DATED:** 2015

APPROVED: "Angelique Lemay" Sept/16

DEAN **DATE**

TOTAL CREDITS: Three

PREREQUISITE(S): None

HOURS/WEEK: Three

I. COURSE DESCRIPTION:

This course for construction techniques and home inspection technician programs begins with a review of fundamental concepts including arithmetic operations. The CICE student, with assistance from a learning specialist will acquire some basic theoretical concepts and topics in proportion and variation, measurement, geometry, and trigonometry. These concepts and topics will be reinforced by the use of practical problems to make the current topic relevant to the students needs. Aspects of business math pertaining to the construction field will be introduced.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the CICE student, with the assistance of a learning specialist, will demonstrate the basic ability to:

1. Solve arithmetic problems of whole numbers, fractions and decimals without the use of a calculator as they apply to the trades. .
2. Create ratios, proportions and percentages and solve problems using a calculator as they apply to the trades.
3. Use ratios and conversion rates to do measurements and measurement conversions on trades related problems..
4. Solve for unknowns and algebraic equations.
5. Solve practical trade problems related to area, perimeter, volumes of various geometric shapes, and solids.
6. Use trigonometry to solve practical trade related problems.
7. Create graphs and perform other related statistical information as they relate to the trades industry.

1. Solve arithmetic problems of whole numbers, fractions and decimals without the use of a calculator as they apply to the trades.

Potential Elements of the Performance:

1) Perform addition, subtraction, multiplication and division of whole numbers without the use of a calculator.
2) Recite and be able to create the multiplication times' table without the use of a calculator.
3) Perform arithmetic using order of operations.
4) Perform addition, subtraction, multiplication and division of fractions.
5) Perform addition, subtractions, multiplication and division of decimal numbers.

2. Create ratios, proportions and percentages and solve problems using a calculator as they apply to the trades.

Potential Elements of the Performance:

1) Create ratios and proportions.
2) Perform special applications of ratios and proportions.
3) Solve trades related problems using ratios and proportions.
4) Create percentages.
5) Solve trades related problems using percentages.

3. Use ratios and conversion rates to do measurements and measurement conversions on trade related problems.

Potential Elements of the Performance:

1) Apply ratios and conversion rates as they relate to conversions.
2) Work with various units of measurement such as Imperial/ English/British, US customary, and the SI metric units.
3) Solve practical measurement conversion problems between various units of measure.

4. Solve for unknowns and algebraic equations.

Potential Elements of the Performance:

1) Perform arithmetic on signed numbers.
2) Work with exponents and square roots.

3) Add and subtract algebraic expressions.
4) Multiply and divide algebraic expressions.
5) Use scientific notation.
6) Solve word problems and algebraic expressions

5. Solve practical trade problems related to area, perimeter, volumes of various geometric shapes, and solids.

Potential Elements of the Performance:

1. Determine area, perimeter and volume of various geometric shapes and solids.
2. Perform angle measurement.
3. Work with polygons, triangles, hexagons, irregular polygon, circles, prisms, pyramids, cylinders, spheres, and cones.
4. Work with angles and triangles.
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6. Use trigonometry to solve practical trade related problems.

Potential Elements of the Performance:

1. Use trigonometric ratios to solve trade related problems.
2. Solve right triangles.
3. Work with oblique triangles.

7. Create graphs and perform other related statistical information as they relate to the trades industry.

Potential Elements of the Performance:

1. Read and create graphs.
2. Use statistical tools, techniques to and methods to perform data analysis.

III. TOPICS:

1. Arithmetic
2. Ratios, proportions and percentages
3. Measurements and conversions
4. Algebra
5. Geometry

6. Trigonometry
7. Statistics

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Mathematics for the Trades – A Guided Approach –Ninth Edition
with MyMathLab ISBN 9780321937988 Prentice Hall Publishing

A scientific calculator is required.

V. EVALUATION PROCESS/GRADING SYSTEM:

Assigned work	30%
Tests/Practical Tests and/or Quizzes	70%

ATTENDANCE

It is your responsibility to attend all classes during the semester. Research indicates there is a high correlation between attendance and student success.

If you are absent from class, it is your responsibility to find out what work was covered and assigned and to complete this work before the next class. Your absence indicates your acceptance of this responsibility.

Unexcused absence from a test may result in a mark of zero ("0"). Absence may be excused on compassionate grounds such as verified illness or bereavement. On return from an excused absence, you should ask your professor to schedule the writing of a make-up test. Failure to do so will be considered as an unexcused absence.

The following semester grades will be assigned to students:

Grade	**Definition**	*Grade Point Equivalent*
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit)	Credit for diploma requirements has been awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.

U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

If a faculty member determines that a student is at risk of not being successful in his or her academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

It is the students' responsibility to notify the professor in advance of any absences and it will be at the professor's discretion to allow rewrites, retakes, modified assignments or quizzes where warranted.

Addendum:

Further modifications may be required as needed as the semester progresses based on individual student(s) abilities and must be discussed with and agreed upon by the instructor

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.

CICE Modifications:

Preparation and Participation

1. A Learning Specialist will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

A. Tests may be modified in the following ways:

1. Tests, which require essay answers, may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests, which use fill in the blank format, may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

B. Tests will be written in CICE office with assistance from a Learning Specialist.

The Learning Specialist may:

1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

C. Assignments may be modified in the following ways:

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

The Learning Specialist may:

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

D. Evaluation:

Is reflective of modified learning outcomes.