

Course Outline

Course Title:	Trade Calculations I		
Course Number:	MATH130	Approval Date:	2018/8/31
Course Hours:	45 hours	Academic Year:	2018
Academic School:	School of General Arts & Sciences		

Faculty:	Christopher Cole - christopher.cole@flemingcollege.ca
Program Co-ordinator or Equivalent:	Victoria Maystruk - victoria.maystruk@flemingcollege.ca
Dean (or Chair):	Sandra Dupret - sandra.dupret@flemingcollege.ca Silvana Macdonald - silvana.macdonald@flemingcollege.ca
Academic Planning and Operations Department:	Cristina Sad - Cristina.Sad@flemingcollege.ca

Course Description

This course will enable students to apply specific trade related mathematical concepts and acquire foundational skills important in the fields of Construction, Welding, Plumbing, Heating, Refrigeration, and Air Conditioning. It is designed to complement and reinforce learning within other first semester courses and program areas.

Prerequisites: None.

Corequisites: None.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Perform accurate calculations with whole numbers, fractions and decimals with and without the aid of a calculator.
2. Accurately perform calculations with exponents, roots and scientific notation.
3. Use the basics of algebra to manipulate and solve applied equations.
4. Apply metric and imperial units of measure and their conversions to various applied situations.
5. Accurately calculate the Area, Perimeter or Volume for basic shapes and solids.

6. Solve right angled triangles using the Pythagorean Theorem. Apply this knowledge to various applicable problems.
7. Use ratios and proportions to solve appropriate applied problems.
8. Use the trigonometric functions to solve various applied problems in right triangle trigonometry.
9. Accurately perform percent calculations.

Learning Resources

Required Resources: Scientific Calculator (the Sharp EL-531X is recommended)

Recommended Textbook: Mathematics for the Trades: A Guided Approach (2nd Canadian Edition) by Robert A. Carmen and Hal M. Saunders and Tom Mills. The text is available in a loose leaf or hard cover option.

An e-textbook purchase option is available through CourseSmart (not through bookstore) with an expiry date of 180 days.

NOTE: The same text will be used for MATH131 in the HVT, WTQ, PLM, CNS, and CET programs

Graphing calculators are not supported or needed for this course.

Cellphones, laptops and other smart devices are not permitted during assessments.

Assessment Summary

Assessment Task	Percentage
Quizzes	30%
Assignments	10%
Tests	60%

Student Success: Policies and Procedures

Mutually, faculty and learners will support and adhere to college Academic Regulations, and Student Rights and Responsibilities. The following policies and guidelines have been developed to support the learning process.

Please click on the link for information about:

- [Academic Integrity \(2-201A\)](https://department.flemingcollege.ca/hr/attachment/7750/download)
(<https://department.flemingcollege.ca/hr/attachment/7750/download>)
- [Accessibility for Persons with Disabilities \(3-341\)](https://department.flemingcollege.ca/hr/attachment/5619/download)
(<https://department.flemingcollege.ca/hr/attachment/5619/download>)

- [Grading and Academic Standing \(2-201C\)](https://department.flemingcollege.ca/hr/attachment/7752/download)
(<https://department.flemingcollege.ca/hr/attachment/7752/download>)
- [Guidelines for Professional Practice: Students and Faculty](https://flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf)
(<https://flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf>)
- [Student Rights and Responsibilities \(5-506\)](https://department.flemingcollege.ca/hr/attachment/269/download)
(<https://department.flemingcollege.ca/hr/attachment/269/download>)

Alternate accessible formats of learning resources and materials will be provided, on request.

Program Standards

The Ministry of Training, Colleges and Universities oversees the development and the review of standards for programs of instruction. Each college is required to ensure that its programs and program delivery are consistent with these standards, and must assist students to achieve these essential outcomes.

This course contributes to Program Standards as defined by the [Ministry of Training, Colleges and Universities](#) (MTCU). Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following elements:

- **Vocational standards** (the vocationally specific learning outcomes which apply to the program of instruction in question);
- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction that contribute to the development of citizens who are conscious of the diversity, complexity and richness of the human experience; and, the society in which they live and work).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program. For further information on the standards for your program, follow the MTCU link (www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/)

Detail Plan

Term:	2018 Fall	Session Code:	DC
Faculty:	Samantha Pihlainen-Bleecker - Samantha.Pihlainen-Bleecker@flemingcollege.ca		
Program Co-ordinator or Equivalent:	Victoria Maystruk - victoria.maystruk@flemingcollege.ca		
Dean (or Chair):	Sandra Dupret - sandra.dupret@flemingcollege.ca		

Learning Plan

Wks/Hrs Units	Topics, Resources, Learning, Activities	Learning Outcomes	Assessment
Week 1	Introduction to Course Whole Numbers -addition, subtraction, multiplication, division	1	
Week 2	Fractions - addition, subtraction, multiplication, division - calculator and non-calculator	1	In-class Quiz #1 - 3% Assignment #1 - 1%
Week 3	Decimals - addition, subtraction, multiplication, division - combined operations and applied problems with proper rounding	1	In-class Quiz #2 - 3% Assignment #2 - 1%
Week 4	Powers, Roots and Scientific Notation - laws of exponents -perform calculations with roots - recognize and perform calculations with numbers written in scientific notation	1,2	In-class Quiz #3 - 3% Assignment #3 - 1%
Week 5	Essential Algebra - fundamental operations with variables, expressions, brackets - solving for unknown variables	1,2,3	In-class Quiz #4 - 3% Assignment #4 - 1%
Week 6	Measurement Conversions I - metric to metric conversions - conversions involving imperial/US-Metric Systems - area and volume conversions	1,2,4	Test #1 - 20%
Week 7	Measurement Conversions II -compound conversions -converting from single unit to combination units (20 oz = 1 lb 4 oz) -decimal (feet to inches) to feet, inches and fractions of an inch and vice versa	1,2,4	In-class Quiz #5 - 3% Assignment #5 - 1%
Week 8	Perimeter and Area of Basic Shapes - Rectangles, Squares, Triangles - Circles - Hexagons - Irregular polygons - Area unit conversions	1,2,4,5	In-class Quiz #6 - 3% Assignment #6 - 1%
Week 9	Volume of basic shapes - Rectangular Prisms - Cylinders - Volume unit conversions	1,2,4,5	In-class Quiz #7 - 3% Assignment #7 - 1%

Wks/Hrs Units	Topics, Resources, Learning, Activities	Learning Outcomes	Assessment
Week 10	Pythagorean Theorem -solving for side lengths -proving square	1,2,3,4,6	Test #2 - 20%
Week 11	Ratio and Proportion -comparison of ratios and rates -recognition and solution method of proportions	1,3,4,7	In-class Quiz #8 - 3% Assignment #8 - 1%
Week 12	Introduction to Basic Trigonometry - defining triangles using trigonometry -sin, cos, and tan - calculator entry	1,3,4,6,7,8	In-class Quiz #9 - 3% Assignment #9 - 1%
Week 13	Percents -converting between decimals, percents, and fractions - recognition and usage of percent change formula	1,3,9	In-class Quiz #10 - 3% Assignment #10 - 1%
Week 14	Review	1,2,3,4,5,6,7,8,9	Test #3 - 20%

Assessment Requirements

Assessment Task	Date/Weeks	Course Learning Outcome	Percentage
In-class Quizzes 10 @ 3% each = 30%	Weeks 2,3,4,5,6,7,8,9,10,11,12,13	1-9	30%
Assignments 10 @ 1% each = 10%	Weeks 2,3,4,5,6,7,8,9,10,11,12,13	1-9	10%
Test #1 @ 20%	Week 6 - covers weeks 1-5 material	1,2,3	20%
Test #2 @ 20%	Week 10 - covers weeks 6-9 material	1,2,4,5	20%
Test #3 @ 20%	Week 14 - covers weeks 10-13 material	1,2,3,4,6,7,8,9	20%

* All MISSED TESTS will receive a grade of "0" (zero) unless prior notification and approval by instructor.

* LATE ASSIGNMENTS will not be accepted without prior approval

* There are no credit recovery options available after the completion of the course

* Cellphones and laptop calculators are NOT permitted for use during tests or in-class quizzes

*The principle of academic dishonesty requires that all work submitted for evaluation and course credit be the original, unassisted work of the student. Cheating or plagiarism including sharing, borrowing, copying, purchasing or collaborating on work except for group projects arranged and approved by the faculty member, or otherwise submitting work that is not the student's own violates this principle and will not be tolerated.

Exemption Contact

Information about the Transfer Credit process can be accessed through your myCampus Portal under the Registrar's Office and Resources Tabs or by contacting the Transfer Credit Coordinator (transfercredit@flemingcollege.ca) in the Registrar's Office.

Prior Learning and Assessment and Recognition (PLAR)

PLAR uses tools to help learners reflect on, identify, articulate, and demonstrate past learning which has been acquired through study, work and other life experiences and which is not recognized through formal transfer of credit mechanisms. PLAR options include authentic assessment activities designed by faculty that may include challenge exams, portfolio presentations, interviews, and written assignments. Learners may also be encouraged and supported to design an individual documentation package that would meet the learning requirements of the course. Any student who wishes to have any prior learning acquired through life and work experience assessed, so as to translate it into a college credit, may initiate the process by applying through the Registrar's office. For more information please click on the following link: <http://flemingcollege.ca/admissions/prior-learning-assessment-and-recognition>

Course Specific Policies and Procedures

It is the responsibility of the student to retain this course outline for future reference. Course outlines may be required to support applications for advanced standing and credit transfer to other educational institutions, portfolio development, PLAR and accreditation with professional associations.

- Student Attendance: Students are expected to attend all classes each week. Students are expected to bring calculators and required learning materials to each class. Students are solely responsible for catching up on course work when absent. This includes collecting course materials (handouts, assignments, etc.) and catching up on missed classroom work. Individual faculty will provide more specific expectations for attendance early in the semester.
- Student Lateness: Students who are late for class are a disruption to their classmates and have a negative impact on the learning environment. Your faculty member will share his/her late policies early in the semester. For reasons relating to classroom management late

students may be refused entry. Lateness in general is unacceptable and will be dealt with on an individual basis.

- Due Dates/Missed Assessments: Refer to the Class Absence Policy.
Unapproved missed tests, quizzes, assignments or other assessments will be given a grade of ZERO. Students are required to follow course norms for submission requirements; alternate forms of submission will not be accepted.
- Academic Integrity: The principle of academic honesty requires that all work submitted for evaluation and course credit be the original, unassisted work of the student.
Cheating, including sharing resources or information about quizzes/tests, copying, purchasing or collaborating on work, except for group projects arranged and approved by the faculty member, or otherwise submitting work that is not the student's own violates this principle and will result in initiation of the College's Academic Integrity Policy (Operating Procedure #2-201A). Full details of the policy, procedure, violation types and forms can be found at: <https://department.flemingcollege.ca/academic-integrity/>.
- Final Grades: Final grades in this course are assigned based on the level of academic achievement which corresponds to the assessment components as cited in this course outline. Faculty members will not offer additional evaluation activities beyond those cited in this course outline.
- Use of cellphones, smart devices or other electronics are only allowed in lecture/seminar at the discretion of the faculty, and not permitted during assessments. Devices need to have notifications turned off (Silent Mode).
- The teaching staff reserves the right to modify the course sequence to better meet the needs of the student group and to facilitate student learning.
- Your success in this course will be directly related to your regular attendance and out-of-class practice and study.
- Calculators: Students must have an appropriate calculator for their course. This can be determined after discussion in Week One with the faculty. Students are responsible for knowing how to use their calculator independently on assessments.