



Welcome to Camosun College!

Camosun College campuses are located on the traditional territories of the W̱SÁNEĆ and Lkwungen peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here. .

School of Access - Academic and Career Foundations Department
MATH 039 Basic Math for Healthcare
COURSE OUTLINE

The Approved Course Description is available on the College website
<http://camosun.ca/learn/calendar/current/web/math.html>

1. Instructor Information

Instructor: Alison Bowe **Phone:** 250.370-4911 **Text:** 250.881.0264
Office: CBA 150 **e-mail:** bowe@camosun.ca

May - August 2019 Instructor Schedule

| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
|-------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
| 8:30-10:30 | | Math S01 CBA 117 | Office Hours CBA 150 | Math S01 CBA 117 | Office Hours CBA 150 |
| 10:30-11:30 | Math S02 CBA 117 | | Math S02 CBA 117 | | Math S02 CBA 117 |
| 11:30-12:30 | | Lunch Break | | Lunch Break | |
| 12:30-1:30 | Lunch Break | Math S03 CBA 117 | Lunch Break | Math S03 CBA 117 | Lunch Break |
| 1:30-3:30 | Office Hours CBA 150 | | Help Centre CBA 109 | | |

2. Intended Learning Outcomes

At the end of the course, students will be able to:

1. Demonstrate knowledge and skills in using the principles and operations of various math topics such as arithmetic, measurement, graphs, formulas, and geometry
2. Apply a variety of strategies in solving math-related problems
3. Apply knowledge and skills in various math topics to solve problems related to Health Care
4. Use knowledge of various math topics as a basis for further study.

3. Required Materials

- (a) Textbook: *Math Basics for the Healthcare Professional*, 4th Ed, by Michele Benjamin-Lesmeister
- (b) calculator (scientific calculator recommended: Sharp EL531W used for MATH 053)

Suggested Supplementary Resources (optional/if needed)

Math videos:

- (i) "Math Antics" <https://www.youtube.com/user/mathantics>: excellent explanation of basic math concepts and skills
- (ii) Other selected open source math videos: <https://sites.camosun.ca/acf-math/math-039/>
- (iii) website www.mymathlab.com (online text, tutorials, videos, and testing)

4. Course Content and Schedule

Self-paced Instructions

The course completion time will vary for each student, depending on a number of factors, including your current level of math skills, motivation, learning rate, and how much time you have to study math, either at the college or at home.

For each unit of your Math 039 text listed in the table below,

- Skip the **Pre-Test** at the beginning of the text, as well as at the beginning of each Unit/Chapter
- Read the **Student Learning Outcomes**, the **Overview**, and **Review** sections for each math topic and study the **Examples**
- Do the **odd numbered questions only** (#1, 3, 5, etc.) in each of the **Practices**
- Check your answers in the back of the book (**Appendix C**); you can also record them in the "Score" column of your Course Outline below, if you wish
- (Optional) For additional review, if needed, do:
 - o post-tests and a pre-tests (answers at the back of the book)
 - o a unit review at the end of the chapter
 - o practice tests for all 13 units (Appendix B)
- Ask for each Module Test when ready

Help Centres: Please also note that your course includes 4 additional hours of lab time over and above the 6 hours per week class time. Please feel free to utilize the Help Centres for extra help with your course, as this is their purpose.

| MATH 039 course content Text: <i>Math Basics for the Healthcare Professional</i> | | Score |
|---|---|-------|
| MODULE 1 | ARITHMETIC OPERATIONS (no calculator) | |
| | | |
| Page | Unit 1 – Whole Number Review | |
| 6 | Addition | |
| 8 | Subtraction | |
| 9 | Multiplication | |
| 11 | Prime Factorization | |
| 12 | Division: <i>Practice</i> | |
| 15 | Solving for the Unknown Number | |
| 16 | Rounding | |
| 17 | Estimation | |
| 18 | Statistical Analysis | |
| 25 | Roman Numerals | |
| 26 | Time in Allied Health | |
| | | |
| Page | Unit 2 – Fractions | |
| 33 | Part-to-whole Relationships | |
| 34 | Equivalent fractions | |
| 35 | Reducing to Lowest or Simplest Terms | |
| 38 | Improper Fractions | |
| 39 | Adding Fractions with Like Denominators | |
| 41 | Finding the Common Denominator | |
| 43 | Difficult Common Denominators | |
| 46 | Ordering Fractions | |
| 46 | Subtraction of Fractions | |
| 51 | Multiplication of Fractions | |
| 55 | Multiplication of Mixed Numbers | |
| 58 | Division of Fractions | |
| 61 | Converting Temperatures Using Fraction Formulas | |
| 63 | Complex Fractions | |
| 66 | Measurement in Fractions | |

| MATH 039 Course Content | | Score |
|--|---|--------------|
| Text: <i>Math Basics for the Health Care Professional</i> | | |
| | | |
| Page | Unit 3 – Decimals | |
| 75 | Decimals | |
| 78 | Rounding Decimals | |
| 79 | Comparing Decimals | |
| 82 | Addition of Decimals | |
| 83 | Subtraction of Decimals | |
| 84 | Multiplication of Decimals | |
| 87 | Division of Decimals | |
| 89 | Simplified Multiplication and Division of Decimals | |
| 92 | Changing Decimals to Fractions | |
| 94 | Changing Fractions to Decimals | |
| 96 | Temperature Conversions with Decimals | |
| 97 | Solving Mixed Fraction and Decimal Problems | |
| | | |
| TEST | Module 1 Test - Arithmetic Operations (Units 1-3) (no calculator) | |
| | (75% minimum) | |
| | | |
| | | |
| MODULE 2 | RATIO, PERCENT & MEASUREMENT (calculator allowed) | |
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| | | |
| Page | Unit 4 – Ratio & Proportion | |
| 105 | Ratio | |
| 109 | Proportion | |
| 110 | Solving for “x” | |
| 115 | Word Problems Using Proportions | |
| 117 | Solving for “x” in More Complex Problems | |
| 119 | Nutritional Application of Proportions | |
| 120 | Practice with Food Labels | |
| | | |
| Page | Unit 5 – Percent | |
| 129 | Percent-to-Decimal Conversion | |
| 130 | Decimal-to-Percent Conversion | |
| 131 | Using Proportion to Solve Percent Problems | |
| 136 | Percent Change | |
| 137 | Percent Strength of Solutions | |
| 141 | Single Trade Discount | |
| | | |
| Page | Unit 6 – Combined Applications | |
| 148 | Conversions Among Fractions, Decimals, Ratios & Percent | |
| 152 | Using Combined Applications in Measurement Conversion | |
| 153 | Standard Units of Measure | |
| | | |
| | | |
| Page | Unit 8 – The Metric System | |
| 188 | Using the Metric Symbols | |
| 190 | Changing Unit Measures | |
| | | |
| | | |
| TEST | Module 2 Test – Ratio, Percent & Measurement (Units 4, 5, 6 & 8) | |
| | (75% minimum) | |
| | | |
| | | |
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| | | |

| MATH 039 Course Content Text: <i>Math Basics for the Health Care Professional</i> | | Score |
|--|---|--------------|
| MODULE 3 | <i>DRUG LABELS, CONVERSIONS AND DOSAGE</i> | |
| Page | <i>Unit 9 - Reading Drug Labels, Medicine Cups, Syringes & IV Bags</i> | |
| 204 | Drug Labels | |
| 209 | Medicine Cups | |
| 210 | Syringes | |
| 211 | IV Bags | |
| Page | <i>Unit 10 - Apothecary Measurement & Conversion</i> | |
| 219 | Apothecary Measurement & Conversions | |
| 229 | Rounding in Dosage Calculations | |
| Page | <i>Unit 11 - Dosage Calculations</i> | |
| 237 | Performing Dosage Calculations | |
| TEST | <i>Module 3 Test – Drug Labels, Conversions & Dosage (Units 9-11)</i> (75% minimum) | |
| MODULE 4 | <i>TYPES OF DOSAGE CALCULATIONS</i> | |
| Page | <i>Unit 12 - Parenteral Dosage</i> | |
| 255 | Injections | |
| Page | <i>Unit 13 – Basics of Intravenous Fluid Administration</i> | |
| 270 | Calculating IV Infusion Rates | |
| 273 | Modified Setup | |
| 275 | Infusion Duration | |
| 277 | Calculating Total Volume | |
| Page | <i>Unit 14 – Basic Dosage by Body Weight</i> | |
| 284 | Conversion to Kilograms | |
| 286 | Calculating Dosage | |
| TEST | <i>Module 4 – Types of Dosage Calculations (Units 12-14)</i> (75% minimum) | |
| Review | Math 039 Review: <i>Comprehensive Post-test (Appendix A on P. 293)</i> | |
| FINAL | Final Exam | |

5. Basis of Student Assessment

- (a) **Tests** 75% of the course grade is based on the average of **all** test scores for modules 1–4 (including both passing and failing test scores)
- (b) **Exams** 25% of the course grade is based on the average of **all** final exam scores (including both passing and failing exam scores)

Note: Students with a record of poor attendance OR poor progress may be restricted from re-registering in Academic and Career Foundations Department courses.

6. Grading System – Standard Grading System <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>

| | | | | | |
|----|---------|----|--------|----|-------------|
| A+ | 90–100% | B+ | 77–79% | C+ | 65–69% |
| A | 85–89% | B | 73–76% | C | 60–64% |
| A– | 80–84% | B– | 70–72% | IP | in progress |

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for information on conversion to final grades, and for additional information on student record and transcript notations.

7. Learning Support and Services for Students

ACADEMIC UPGRADING HELP CENTRE (CBA 109 or Ewing 342)

<http://camosun.ca/services/help-centres/math.html>

Help with coursework, reference & learning materials library, computers & printer, quiet testing & study areas

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/services/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.