CAMOSUN COLLEGE
School of Access
Academic and Career Foundations Department

MATH 039 Basic Math for Health Care

COURSE OUTLINE

The Approved Course Description is available on the College website
http://camosun.ca/learn/programs/academic-upgrading/what-youll-learn/upgrading.html#tabs-fundamental_a

Ω *Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records.*

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1. Instructor Information

Instructor: Pam Johnson **Phone**: 370-3850

Office: CBA 148 **e-mail**: johnsonp@camosun.bc.ca

2. Intended Learning Outcomes

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

1. use mathematics at an ABE Fundamental level with competence
2. demonstrate knowledge and skills in using the principles and operations of basic arithmetic
3. apply a variety of strategies in solving math-related problems
4. apply knowledge and skills in basic arithmetic to solve problems related to the Health Care professions.

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)

(a) Math videos:
(i) "Math Antics" https://www.youtube.com/user/mathantics: excellent explanation of basic math concepts and skills
(ii) UFV site collection of additional math resources (refer to Math 052, 053 & 062) http://www.ufv.ca/uup/academic-resources/
(iii) "Khan Academy" videos – simply search relevant math topics on YouTube
(i.e.) For videos about Unit 2 on your Course Outline: Search **"Khan Academy fractions"**

(b) Math 023-026 materials

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,
a. Skip **the Pre-Test** at the beginning of the text, as well as at the beginning of each Unit/Chapter
b. Read the **Student Learning Outcomes**, the **Overview**, and **Review** sections for each math topic and study the **Examples**
c. Do the **odd numbered questions only** (#1, 3, 5, etc.) in each of the **Practices**
d. 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
e. (Optional) For additional review, if needed, do:
    - post-tests and a pre-tests (answers at the back of the book)
    - a unit review at the end of the chapter
    - practice tests for all 13 units (Appendix B)
f. 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: *Math Basics for the Healthcare Professional***	**Score**
MODULE 1	***ARITHMETIC OPERATIONS (no calculator)***	
Page	***Unit 1 – Whole Number Review***	
6	Addition	
8	Subtraction	
9	Multiplication	
11	Prime Factorization	
12	Division: *Practice*	
15	Solving for the Unknown Number	
16	Rounding	
17	Estimation	
18	Statistical Analysis	
25	Roman Numerals	
26	Time in Allied Health	

	MATH 039 Course Content Text: *Math Basics for the Health Care Professional*	Score
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	
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)***	
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	

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

5. Basis of Student Assessment (Weighting)

(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

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

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

There are many other Camosun services available to help you succeed in and out of the classroom, including education planning, learning and personal support, campus life, work and housing, and getting around. This information is available at Registration or the College web site http://camosun.ca/services/

8. College Policies

ACADEMIC PROGRESS

The purpose of this policy is to enhance a learner's likelihood of success, and to encourage the learner to use College resources effectively.

http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf

GRADING

The purpose of this policy is to ensure that grading and promotion are consistent and fair.

http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf

STUDENT CONDUCT

The purpose of this policy is to provide clear expectations of appropriate academic and non-academic student conduct, and to establish processes for resolution of conduct issues or the imposition of sanctions for inappropriate conduct.

http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf