

Math 20-3 Section G

5 Credits, 16 weeks, 5 hours

Course Description

This course further develops the concepts introduced in Math 10-3. The focus on the development of spatial sense through direct and indirect measurement is expanded to include the modeling and scale calculations of 3 dimensional objects. Problems and diagrams requiring the manipulation and application of formulas related to slope and rate of change are added to those of volume, capacity and surface area. Students create and interpret statistical data expressed within graphs, and they prepare budgets, credit calculations and compare services provided by financial institutions.

Prerequisites: Math 10C or Math 10-3 or the permission of the Program Chair.

Instructor

Melodee Helgason
Gregoire Lake Learning Centre
780 334-2559 Office
780 838-4361 cell (leave message)
melodee.helgason@keyano.ca

Office Hours

Monday 9:00 – 10:00 and 4:00 – 5:00
Tuesday 9:00 – 10:00
Wednesday 9:00 – 10:00
Thursday 9:00 – 10:00

Hours of Instruction

Tuesday 3:00 – 5:00
Wednesday 3:00 – 5:00
Thursday 3:00 – 4:00

Required Resources

Math Works 11, Pacific Educational Press, ISBN 978-0-9867-00001413-9

- Scientific calculator that has the sine (sin), cosine (cos), and tangent (tan) buttons on it.
- Geometry Set/Straight edge

Course Outcomes

Upon successful completion of Math 20-3, students will be able to:

- Solve problems that involve SI and imperial units in surface area measurements and verify the solutions.
- Solve problems that involve SI and imperial units in volume and capacity measurements.
- Solve problems that involve two and three right triangles.
- Solve problems that involve scale.

- Model and draw 3-D objects and their views.
- Draw and describe exploded views, component parts and scale diagrams of simple 3-D objects.
- Analyze puzzles and games that involve numerical reasoning, using problem-solving strategies.
- Solve problems that involve personal budgets.
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- Demonstrate an understanding of financial institution services used to access and manage finances.
- Demonstrate an understanding of credit options, including credit cards and loans.
- Solve problems that require the manipulation and application of formulas related to volume, capacity, surface area, slope and rate of change.
- Demonstrate an understanding of slope:
 - as rise over run
 - as rate of change
 - by solving problems.
- Solve problems by applying proportional reasoning and unit analysis.
- Solve problems that involve creating and interpreting graphs, including:
 - bar graphs
 - histograms
 - line graphs
 - circle graphs.

Evaluation

Assignments	35%
Unit Tests	40%
Final Exam	25%
Total	100%

The minimum pre-requisite for progression is 1.7 (refer to Grading System on following page)

Grading System

Descriptor	4.0 Scale	Percent
Excellent	4.0	96 – 100
	4.0	90 – 95
	3.7	85 – 89
Good	3.3	81 – 84
	3.0	77 – 80
	2.7	73 – 76
Satisfactory	2.3	69 – 72
	2.0	65 – 68
Minimum Prerequisite	1.7	60 – 64
Poor	1.3	55 – 59
Minimum Pass	1.0	50 – 54
Failure	0.0	0 – 49

Proposed Schedule of Topics**Chapter 1: Slope and Rate of Change**

- 1.1 Rise Over Run
- 1.2 Grade, Angle of Elevation, and Distance
- 1.3 Rate of Change

Chapter 2: Graphical Representation

- 2.1 Broken Line Graph
- 2.2 Bar Graph
- 2.3 Histogram
- 2.4 Circle Graph

Chapter 3: Surface Area, Volume, and Capacity

- 3.1 Surface Area of Prisms
- 3.2 Surface Area of Pyramids, Cylinders, Spheres, and Cones
- 3.3 Volume and Capacity of Prism and Cylinders
- 3.4 Volume and Capacity of Spheres and Cones, and Pyramids

Chapter 4: Trigonometry of Right Triangles

- 4.1 Solving for Angles, Lengths and Distances
- 4.2 Solving complex Problems in the Real World

Chapter 5: Scale Representations

- 5.1 Scale Drawing and Models
- 5.2 Two – Dimensional Representations

5.3 Three- Dimensional Representations

Chapter 6: Financial Services

- 6.1 Choosing an Account
- 6.2 Simple and Compound Interest
- 6.3 Credit Cards and Store Promotions
- 6.4 Personal Loans, Lines of Credit, and Overdraft

Chapter 7: Personal Budgets

- 7.1 Preparing to Make a Budget
- 7.2 The Budgeting Process
- 7.3 Analyzing a Budget

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment

Penalties for academic offences range from a verbal reprimand to dismissal from the College, and in certain circumstances may involve legal action.

Specialized Supports

Counselling and Disability Services

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

SKILL Centre

The SKILL Centre is a learning space in the Clearwater Campus at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.

The SKILL Centre, through a variety of delivery methods, provides assistance in skill development to Keyano students. Assistance is provided by instructors, staff and student tutors. Individuals wishing to improve their mathematics, writing, grammar, study, or other skills, can take advantage of this unique service.

Authorization

This course outline has been reviewed and approved by the Program Chair.

Melodee Helgason, Instructor

Lisa Turner, Chair

Date Authorized

Guy Harmer, Dean

Date Authorized