

Mathematics 20-2
Course Outline
Fairview High School
A Block (8:55 – 10:07am)
Sept. 2022 – Jan. 2023

INSTRUCTOR: Miss K. Wyness, wynessk@prsd.ab.ca

RESOURCE: Principles of Mathematics 11, Nelson, 2012

COURSE OBJECTIVE:

Math 20-2 (5 credits)

The “-2” course sequence is designed to provide students with the mathematical understandings and critical-thinking skills identified for **post-secondary studies in programs that do not require the study of calculus**. Topics include geometry, measurement, number and logic, logical reasoning, relations and functions, statistics, and probability.

COURSE OVERVIEW: * This timeline is subject to change. *

UNIT	TOPIC (Chapter)	TIMELINE
1.	Radical Expression and Equations (Ch 4)	Aug. 30 – Sept. 13
2.	Trigonometry (Ch 2 & 3)	Sept. 14 – Oct. 18
3.	Proportional Reasoning (Ch 8)	Oct. 19 – Nov. 1
4.	Inductive and Deductive Reasoning (Ch 1)	Nov. 2 – Nov. 16
5.	Quadratic Functions and Equations (Ch 6 & 7)	Nov. 17 – Dec. 22
6.	Statistics (Ch 5)	Jan. 9 – Jan. 20
7.	Mathematics Research Project	

ASSESSMENT:

Course Work:	60%	Unit Exams
	40%	Quizzes, Assignments, Projects
Final Grade:	70%	Course Work (42% exams, 28% quizzes/assignments/projects)
	30%	Grade on Final Exam

GENERAL EXPECTATIONS:

- **REGULAR ATTENDANCE** – Attendance is one of the most important factors for academic success. If an absence is unavoidable, it is YOUR responsibility to catch up on work that you missed. Please make arrangements with me or a classmate to obtain missed materials. If you miss a test due to an excused absence, you may write the test at lunch or in class on the first day back.
- **ARRIVE ON TIME** – When the bell goes, I expect you to be in your desk, with your books open and phone put away, ready to start class. If lateness is unavoidable, please enter the classroom with a minimum of disruption.
- **COME PREPARED** – Please bring books, pencils, calculators, etc. to class each day. All math is to be done in **pencil**. All handouts, quizzes, assignments, and exams are to be kept in order in a binder. These will assist you as a study guide.
- **ASSIGNMENTS** – All assignments are due at the beginning of class, on or before the due date. If you need extra time for an assignment please make arrangements with me prior to the due date.
- **WORK HABITS** – It is expected that students use class time to the best of their abilities for the whole period every class. While I am providing instruction, I expect you to be listening and **NOT** talking. You may of course raise your hand to ask questions or make comments. Mature, respectful behaviour is a necessity for all members of the class.

TEACHING METHODOLOGY:

Students will be taught through a variety of different instructional methods and strategies including, but not limited to: lecture, questions and answer discussion, small group work, independent learning, individual tutorials, use of manipulatives, and technological means including the use of a Smartboard, videos, online tools, and where appropriate personal owned devices.

ELECTRONIC DEVICES:

- Cell phones and other electronic devices may only be used at times indicated by the teacher. Please refrain from using them to make calls or text message during class time. If consistently used inappropriately, they will be placed in the main office.
- All electronic devices must be placed on the teacher's desk during quizzes and exams.

MATHEMATICS 20-2 COURSE OUTLINE:

Radical Expressions and Equations

General Outcome: Develop number sense and logical reasoning

Specific Outcomes:

- Solve problems that involve operations on radicals and radical expressions with numerical and variable radicands (limited to square roots)
- Solve problems that involve radical equations (limited to square roots or cube roots)

Trigonometry

General Outcome: Develop spatial sense

Specific Outcomes:

- Derive procs that involve the properties of angles and triangles
- Solve problems that involve properties of angles and triangles
- Solve problems that involve the cosine law and the sine law, excluding the ambiguous case

Proportional Reasoning

General Outcome: Develop spatial sense and proportional reasoning

Specific Outcomes:

- Solve problems that involve the application of rates
- Solve problems that involve scale diagrams, using proportional reasoning
- Demonstrate an understanding of the relationships among scale factors, areas, surface areas and volumes of similar 2-D shapes and 3-D objects

Inductive and Deductive Reasoning

General Outcome: Develop number sense and logical reasoning

Specific Outcomes:

- Analyze and prove conjectures, using inductive and deductive reasoning, to solve problems
- Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.

Quadratic Functions and Equations

General Outcome: Develop algebraic and graphical reasoning through the study of relations

Specific Outcomes:

- Demonstrate an understanding of the characteristics of quadratic functions, including:
 - Vertex
 - Intercepts
 - Domain and range
 - Axis of symmetry
- Solve problems that involve quadratics equations

Statistics

General Outcome: Develop statistical reasoning

Specific Outcomes:

- Demonstrate an understanding of normal distribution, including:
 - Standard deviation
 - Z-scores
- Interpret statistical data, using:
 - Confidence intervals
 - Confidence levels
 - Margin of error

Mathematics Research Project

General Outcome: Develop an appreciation of the role of mathematics in society

Specific Outcomes:

- Research and give a presentation on a historical event or an area of interest that involves mathematics

Goals:

You have to set goals that are almost out of reach. If you set a goal that is attainable without much work or thought, you are stuck with something below your true talent and potential. – Steve Garvey

My goal for **Mathematics 20-2** is _____%