# Applied Mathematics 30S

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*The essence of mathematics is not to make simple things complicated, but to make complicated things simple. ~S. Gudder*

**Welcome to Grade 11 Applied Math!**

Grade 11 Applied Math 30S is intended for students considering post-secondary studies that do not require a study of theoretical calculus. It is context driven and promotes the learning of numerical and geometrical problem-solving techniques as they relate to the world around us. It builds upon the foundation knowledge and skills from Grade 10 Introduction to Applied and Pre-Calculus Math 20S and builds a foundation for Grade 12 Applied Math 40S. Primary goals of Applied Math 30S are to have students develop critical-thinking skills through problem solving and model real-world situations mathematically to make predictions.

Applied is a fast paced, intense course where students must be prepared to put consistent effort into daily homework and assignments in order to keep up with the work. **Students will have homework and/or review every night.**

**Note: It is recommended that students entering Grade 11 Applied Math have a grade of 65% or higher in Grade 10 Applied Pre-Calculus Math.**

**If you don't understand something, please ask!** Sharing your questions or comments during class helps me teach the class and helps you and your classmates learn.

## Evaluation

You will never be surprised with any assessments. I will always give you an outline of how you will be assessed and what you will be assessed on. You will need to keep up with your homework, study, and work hard to do well in this course and take advantage of this learning opportunity you have been given.

Course material will be weighted as follows. Remember that you always have a chance to improve a mark. Do not give up on learning an outcome.

**Term (75%):**

| | |
|---|---|
| Knowledge and Understanding | 50% |
| Problem Solving | 30% |
| Mental Math and Estimation | 20% |

**Exam (25%)**

**Note:** All assignments are due at the **beginning** of class.

**Extra Help**

Grade 11 Applied is an extensive course that covers many different topics and requires understanding rather than memorization. Students who are attending regularly and putting in effort will have no problems succeeding in this course.

Please use these opportunities to receive some individual help if and when you need it.

- Tuesdays and Thursday at lunch – Please let me know that you are planning on coming. These times are subject to change based on other commitments I have that week at lunch.
- Other times by appointment.

**Required Materials**

3 ring binder, paper, dividers, pen/pencil, scientific calculator, graph paper

**Required Course Outcomes***

**Measurement:**

- 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 2D shapes and 3D objects.

**Geometry:**

- Derive proofs that involve the properties of angles and triangles.
- Solve problems that involve the properties of angles and triangles.
- Solve problems that involve the cosine law and the sine law, including the ambiguous case.

**Logical Reasoning:**

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

**Statistics:**

- Demonstrate an understanding of normal distribution, including: standard deviation, z –scores
- Interpret statistical data, using: confidence intervals, confidence levels, margin of error

*We are what we repeatedly do. Excellence, therefore, is not an act but a habit.*

*~ Aristotle*

**Relations and Functions:**

- Model and solve problems that involve systems of linear inequalities in two variables.
- Demonstrate an understanding of the characteristics of quadratic functions, including: Vertex, intercepts, domain and range, axis of symmetry

**Mathematics Research Project**

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