

Course: Pre-Calculus 12

Teachers: Michael Chang, Julia Dai, and Lorrie Welch

Contact information: mchang@sd44.ca, jdai@sd44.ca, and lwelch@sd44.ca

Course Description:

This course is designed to support students in developing the mathematical understandings and competencies identified for entry into post-secondary programs that require the study of theoretical calculus. Curricular content includes expanding functions and equations to include polynomial, exponential, logarithmic, and trigonometric. Students will explore reasoning, problem solving, communicating, connecting and reflecting within the content of this course.

Summer Learning Beliefs:

Summer Learning provides an engaging learning environment where all students can challenge themselves academically and fulfill their learning goals. To ensure this, students will:

- abide by the student Code of Conduct
- adhere to the Academic Honesty policy
- adhere to the *Summer Learning* Student Engagement policy
- respect themselves and others
- attend every class and be punctual
- inquire, think, and participate to the best of their ability
- access technology in class when instructed to do so and for learning purposes only
- challenge themselves and have fun learning

All Summer Learning policies can be accessed at:

<https://www.sd44.ca/school/summer/policies/Pages/default.>

Learning Plan:

	Evidence of Learning (Assessment)	Learning Plan
80%	<ul style="list-style-type: none"> • engage in group discussions about the mathematical contents within the course • create study notes for their own summary of learning • present during Celebration of Learning • create concept maps to see the flow of the curricular competencies • complete daily assignments • quizzes • tests • projects 	<p><i>What the students will know:</i></p> <ul style="list-style-type: none"> • logarithmic functions and equations • exponential equations • operations on logarithms • polynomial functions and equations • transformations of functions, including radical, absolute value, and reciprocal functions • rational functions • trigonometric functions and equations with real numbers • trigonometric identities <hr/> <p><i>What the students will do:</i></p> <p>Reasoning and Analyzing</p> <ul style="list-style-type: none"> • use reasoning and logic to analyze and apply mathematical ideas • estimate reasonably • use tools or technology to analyze relationships and test conjectures • model mathematics in contextualized experiences <p>Understanding and Solving</p> <ul style="list-style-type: none"> • develop, demonstrate, and apply conceptual understanding of mathematics • visualize to explore and illustrate mathematical concepts and relationships • apply flexible strategies to solve problems in both abstract and contextualized situations <p>Communicating and Representing</p> <ul style="list-style-type: none"> • communicate mathematical thinking in many ways • represent mathematical ideas in a variety of ways • explain and justify mathematical ideas <p>Connecting and Reflecting</p> <ul style="list-style-type: none"> • reflect on mathematical thinking

		<ul style="list-style-type: none"> connect mathematical concepts to each other and to other areas and personal interests
		<p><i>What the students will understand:</i></p> <ul style="list-style-type: none"> many functions are related through inverse operations analyzing the characteristics of functions allow us to solve equations, and model and understand relationships transformations of shapes extend to functions in all of their representations
20%	School Based Summative Assessment	Final Exam covering the Big Ideas
100%		

Grade Boundaries:

An “A” student will/can...

- Demonstrate and applies the curricular competencies
- Analyze the information and synthesize the correct solution
- Discern challenging patterns
- Apply the concepts and extrapolate onto contextualized situations
- Superb command of numeracy (no computational error)
- Challenge problems in familiar and unfamiliar situation

A “B” student will /can ...

- Demonstrate and sometimes apply the curricular competencies
- Analyze the information and synthesize the solution
- Identify the complex patterns within the context
- Apply the concepts and able to understand some details in contextualized situations
- Good command of numeracy
- Challenge problems in familiar and working towards unfamiliar situations

A “C” student will /can ...

- Demonstrate the curricular competencies
- Organize the information and attempt to interpret the solution
- Identify the patterns within the context
- Build on the concepts and still working on finding the details in contextualized situations
- Solve routine two-step problems

Celebration of Learning:

The 2018 Celebration of Learning is shaped around “Ways of Knowing”.



In Pre-Calculus 12, we will be exploring Language, Reason, Intuition, and Memory portion of “Ways of Knowing.” The ideas will be derived from the exploration of their current Summer Learning experience and from the experience in student’s previous math courses to come up with a presentation where it portrays these four “Ways of Knowing.”

Our class will collaborate to create one Pecha Kucha presentation. A Pecha Kucha presentation uses imagery and spoken word. Each student is responsible for preparing 3 slides of images and 30 seconds of spoken content about the ways in which we know.

Resources:

Resources
<ul style="list-style-type: none">• Pre-Calculus 12 textbook – McGraw Hill