Course: Pre-Calculus 12

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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 expands 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 engage 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/About/Pages/default.aspx#/=

Course Syllabus:

Unit	Essential Questions	Content	Curricular Competencies	Assessment Task
Transforming Graphs of Functions & Composite Functions	How does changing an equation of a function transform its graph?	• Transformations of functions and relations	• Connecting and Reflecting • Understanding and Solving • Communicating and Representing	• Initial Reflection (connecting & reflecting) • Formative assessments: Assignments & Quizzes • Summative assessments: Quiz/Test/Project
Exponential &	What are the features of the graph of an exponential function?	• Exponential functions and equations • Logarithms: operations,	• Reasoning and Modelling • Understanding and Solving • Communicating and Representing	• Formative assessments: Assignments & Quizzes • Summative assessments: Quiz/Test/Project

Logarithmic Functions	How can we manipulate logarithmic and exponential expressions?	functions, and equations		
Trigonometry	What is the relationship between degrees and radians? How can we graph a trigonometric function?	• Trigonometry: functions	• Reasoning and Modelling • Understanding and Solving • Communicating and Representing	• Formative assessments: Assignments & Quizzes • Summative assessments: Quiz/Test/Project
Trigonometric Equations & Identities	How can we manipulate trigonometric ratios?	• Trigonometry: equations and identities	• Reasoning and Modelling • Understanding and Solving • Communicating and Representing	• Formative assessments: Assignments & Quizzes • Summative assessments: Quiz/Test/Project
Polynomial & Rational Functions	What algebraic techniques can we use to help us graph a polynomial function?	• Polynomial functions and equations • Rational functions	• Understanding and Solving • Communicating and Representing	• Formative assessments: Assignments & Quizzes • Summative assessments: Quiz/Test/Project
Summative & Celebration of Learning	How do we bring together the use of technology with our new knowledge of functions?	• Transformations of Families of Functions	• Reasoning and Modelling • Understanding and Solving • Communicating and Representing • Connecting and Reflecting	• Final Project/ Reflection (Connecting and Reflecting)

Grade Descriptors:

"A" quality evidence of learning….

- Demonstrate the curricular competencies and apply them in situational contexts
- Analyze the information and synthesize the correct solution
- Discern challenging patterns
- Apply the concepts and extrapolate onto contextualized situations
- Demonstrate superb command of numeracy (no computational error)

- Solve challenging problems in familiar and unfamiliar situations

"B" quality evidence of learning….

- Demonstrate the curricular competencies and sometimes apply them in situational contexts
- Analyze the information and synthesize the solution
- Identify the complex patterns within the context of the problem
- Apply the concepts and understand some details in contextualized situations
- Demonstrate good command of numeracy
- Solve challenging problems in familiar and working towards unfamiliar situations

"C" quality evidence of learning….

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

Resources:

Resources
Pre-Calculus 12 MyWorktext - Pearson
Students will need a scientific and a graphing calculator (TI 83 or 84 is preferred)

We would like to thank the Coast Salish people, specifically the Skwxwú7mesh Nation and Tsleil-Waututh Nation, on whose unceded traditional territory the North Vancouver School District resides. We value the opportunity to learn, share and grow on this traditional territory.