Course: Mathematics 10 Foundations and Pre-Calculus

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Course Description:

Mathematics 10 Foundations and Pre-Calculus is a course that prepares students to become numerate. This pathway is designed to provide students with the mathematical understandings and critical thinking skills identified for entry into post-secondary programs. This course will assist students to develop the ability to conjecture, reason logically, employ quantitative and spatial information, and apply a variety of mathematical methods to solve problems and make decisions confidently and independently.

Course Expectations:

It is expected that students will:
- Abide by the student Code of Conduct
- Adhere to the Academic Honesty policy
- Adhere to the Summer Learning Student Engagement policy
- Respect yourself and others
- Attend every class and be punctual
- Inquire, think, and participate to the best of your individual ability
- Access technology in class for learning purposes only & only when instructed to do so
- Challenge yourself and have fun learning
- Summer Learning policies can be accessed at: https://www.sd44.ca/school/summer/policies/Pages/default.aspx
**Big Ideas:**

By the end of this course students will be expected to understand the following big ideas:
- Represent numbers and describe quantity.
- Develop computational fluency and form a strong sense of number.
- Be able to use patterns to represent identified regularities and form generalizations.
- Describe, measure, and compare spatial relationships.
- Analysis of data and chance helps us to compare and interpret ideas.

**Curricular Competencies:**

By the end of this course, students will be expected to:


**Core Competencies:**

**Communication** - The communication competency encompasses the set of abilities that students use to impart and exchange information, experiences and ideas, to explore the world around them, and to understand and effectively engage in the use of digital media.

**Thinking** - The thinking competency encompasses the knowledge, skills and processes we associate with intellectual development. It is through their competency as thinkers that students take subject-specific concepts and content and transform them into a new understanding. Thinking competence includes specific thinking skills as well as habits of mind, and metacognitive awareness.

**Personal and Social** - Personal and social competency is the set of abilities that relate to students' identity in the world, both as individuals and as members of their community and society. Personal and social competency encompasses the abilities students need to thrive as individuals, to understand and care about themselves and others, and to find and achieve their purposes in the world.
**Course Content:**

| **Measurement** | This section will deal with solving problems involving Linear Measurement, Surface Area and Volume of 3-D objects, and Trigonometry. Students will be expected to solve problems and apply reasoning to problems involving metric and imperial measurement conversions, determine surface area and volume of cones, cylinders, prisms, pyramids and spheres, as well as solve problems using the primary trigonometric ratios, similar triangles and Pythagorean Theory. |
| **Algebra** | This section deals with Factoring, Powers and Polynomials. Students will be expected to demonstrate an understanding of prime factorization, GCF, LCM, square roots and cube roots. In addition, students will work with rational and integral powers, the exponent laws as well as understand the relationship of powers and radicals. Finally, students will work with polynomials and be able to demonstrate an understanding of how polynomials can be multiplied and factored by different means. |
| **Relations and Functions** | In this section students will learn to interpret and explain relationships among data, graphs and situations, understand relations and functions, understand the concept of slope of various linear relationships. Students will also be able to describe and represent linear relations by their components and their graphs as well as by using function notation. Finally students should be able to relate the linear relations in slope/intercept from, general form and slope/point form and also solve linear systems in 2 variables. |

**Learning Plan:**

Student Learning Activities and Strategies may include:
- Note taking and active listening
- Group work/peer teaching
- Projects and presentations

**Assessment:**

Assessment is the systematic gathering of information about what students know, are able to do, and are working toward. Assessment strategies may include:
- Student Journal evaluation
- Homework assignments
- Oral and group presentations
- Attitude and participation
- Self and peer evaluation
- Written assignments and projects
- Quizzes
- Chapter tests

July 2017
**Evaluation:**

Based on performance standards and criteria:
*(Complete the chart to indicate the percentage break down of your evaluation)*

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Percentage of final Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Term Assignments</strong></td>
<td>80%</td>
</tr>
<tr>
<td><em>(Student Journal evaluation, Oral &amp; Group Presentations, Homework Assignments, Self &amp; Peer Evaluation, Written Assignments &amp; Projects, Quizzes and Chapter Tests)</em></td>
<td></td>
</tr>
<tr>
<td><strong>School based Final Assessment</strong></td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

**Supplies:**

Students must bring the following to every class:
- Binder with loose leaf paper, graph paper and dividers
- Pencils, pens, eraser, ruler
- Scientific calculator (mandatory)
- Textbook

**Resources:**


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