




Foundations for College Mathematics, Grade 12, MAP4C

	Ontario Ministry of Education www.edu.gov.on.ca /eng/		Toronto District School Board www.tdsb.on.ca		R.H. KING ACADEMY http://schools.tdsb.on.ca/rhking/
COURSE OF STUDY OUTLINE					
Department	<i>Mathematics</i>		Course Type	<i>College</i>	
Teacher	<i>B. Leszcz</i>		Grade	<i>12</i>	
Course Title	<i>Grade 12 College Mathematics</i>		Credit Value	<i>One</i>	
Course Code	<i>MAP4C</i>		Prerequisites	<i>MBF3C</i> <i>MCF3M</i>	
Ministry Document	<i>The Ontario Curriculum. http://www.edu.gov.on.ca/eng/curriculum/secondary/math.html</i>				
Learning Resources					

R.H. King Academy, TDSB

Curriculum Leader: B. Leszcz

Policy Document: *The Ontario Curriculum Grade 11 and 12 (2007 Revised)*

Prerequisites: Foundations for College Mathematics, Grade 11, College Preparation, or Functions and Applications, Grade 11, University/College Preparation

Value: 1 Credit

Textbook:

Overall Goals: This course enables students to broaden their understanding of real-world applications of mathematics. Students will analyse data using statistical methods; solve problems involving applications of geometry and trigonometry; solve financial problems connected with annuities, budgets, and renting or owning accommodation; simplify expressions; and solve equations. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for college programs in areas such as business, health sciences, and human services, and for certain skilled trades.

Curriculum:

Mathematical Models

- Evaluate powers with rational exponents simplify algebraic expressions involving exponents and solve problems involving exponential equations graphically and using common bases
- Describe trends based on the interpretation of graphs compare graphs using initial conditions and rates of change and solve problems by modelling relationships graphically and algebraically.
- Make connections between formulas and linear, quadratic, and exponential relations; solve problems, and describe applications of mathematical modelling in various occupations

Personal Finance

- Study annuities including mortgages; solve problems using technology
- Gather and interpret information about owning vs renting accommodation, and solve problems involving the associated costs.
- Design justify and adjust budgets for individuals and families described in case studies, applying the mathematics of personal finance

Geometry and Trigonometry

- Solve problems involving real-world applications, using measurement and geometry
- Solve problems involving trigonometry using primary trig ratios in acute and obtuse triangles using the sine law and the cosine law, including problems arising from real-world applications. Describe applications in various occupations.

Data Management

- solve problems involving two-variable data by collecting, organizing, analyzing, and evaluating data; Interpret and draw conclusions from the data
- understand applications of data management used by the media and the advertising industry and other occupations

Learning Skills:

The learning skills (Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self Regulation) are critical for the achievement of the curriculum expectations and student success. Students are expected to attend every class, complete all homework and insure that assignments are completed and handed in on time.

Strategies:

Students will have the opportunity to learn in a variety of ways –individually, cooperatively, independently, with teacher direction, through hands-on experience, and through examples followed by practice. The approaches and strategies used in the classroom to help students meet the expectations of this curriculum will vary according to the objectives of the learning and the needs of

the students. It is important for students to take every opportunity to learn the material covered prior to the evaluation.

Evaluation:

Seventy per cent of the grade will be based on evaluations conducted throughout the course. Evaluations will be in the form of tests, quizzes, and assignments. Assignments for evaluation may include rich performance tasks, demonstrations (board work), and projects. This portion of the grade will reflect the student's most consistent level of achievement throughout the course.

Thirty per cent of the grade will be based on a final assessment administered towards the end of the course. The final exam allows the student an opportunity to demonstrate comprehensive achievement of the overall expectations for the course.

Students will be given numerous and varied opportunities to demonstrate the full extent of their achievement of the curriculum expectations (content standards) across all four categories of knowledge and skills.

Teachers will ensure that student learning is assessed and evaluated in a balanced manner with respect to these four categories:

1. **Knowledge and Understanding** Subject specific content acquired in each course, and the comprehension of its meaning and significance.
2. **Thinking** The use of critical and creative thinking skills and/or processes.
3. **Communication** The conveying of meaning through various forms.
4. **Application** The use of knowledge and skills to make connections within and between various contexts.

Term Grades for Provincial Reports Throughout the Year:

The midterm mark will be based on the evaluations that have been conducted to that point in the course and will be preliminary and tentative. This mark will be based on the most consistent level of achievement to that point in time, but some of the overall expectations, strands, and units will not have been addressed and the student's grades will most likely change when the student's entire work is evaluated by the end of the course.

Evaluation Plan

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Term Work- 70%

Final Exam – 30%

- Quizzes, assignments, projects 15%
- Tests 45%
- Independent Study Assignments* 10%

*At RH King one of our unique features is a focus on ISUs, or Independent Study Units. In Grade 12 College Mathematics, an ISU is a small assignment that is given to students to complete, several times through the semester. In most cases students are given a week to complete the 1-1.5 hour worksheet. Support is provided during Clinic, after school, and also during class time. The intent is to facilitate learning the responsibility required to complete a task, on time, and learning to seek out help, should it be needed, to be able to complete the task. These skills promote the students' growth towards becoming independent learners.

Course Work

Approximate Timing

Unit 1: Powers	(3 weeks)
Unit 2: Working with Formulas	(1 weeks)
Unit 3: Trigonometry	(2 weeks)
Unit 4: Area/Surface Area/Volume/Optimization	(1 week)
Unit 5: Modelling Relationships (Linear/Quadratic)	(3 weeks)
Unit 6: Personal Finance	(3 weeks)
Unit 7: Data Management	(2 weeks)
Unit 8: Statistical Literacy	(1 week)
Review and preparation for Exam:	1 week