CLARKSON SECONDARY SCHOOL

Course Code: MAP 4C

Course Name: Foundations for College Mathematics
Grade 12 College

Prerequisite: Foundations for College Mathematics, Grade 11, College Preparation, or Functions
Or
 Applications, Grade 11, University/College Preparation

Material Required:
Foundations for College Math 12
(Mc Graw Hill Ryerson)

Textbook Replacement Cost:
$100.00

Course Description

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.

Overall Course Expectations

A. **MATHEMATICAL MODELS**
By the end of this course, students will:
1. evaluate powers with rational exponents, simplify algebraic expressions involving exponents, and solve problems involving exponential equations graphically and using common bases;
2. 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;
3. make connections between formulas and linear, quadratic, and exponential relations, solve problems using formulas arising from real-world applications, and describe applications of mathematical modelling in various occupations.

B. **PERSONAL FINANCE**
By the end of this course, students will:
1. demonstrate an understanding of annuities, including mortgages, and solve related problems using technology;
2. gather, interpret, and compare information about owning or renting accommodation, and solve problems involving the associated costs;
3. design, justify, and adjust budgets for individuals and families described in case studies, and describe applications of the mathematics of personal finance.

C. **GEOMETRY AND TRIGONOMETRY**
By the end of this course, students will:
1. solve problems involving measurement and geometry and arising from real-world applications;
2. explain the significance of optimal dimensions in real-world applications, and determine optimal dimensions of two-dimensional shapes and three-dimensional figures;
3. solve problems using primary trigonometric ratios of acute and obtuse angles, the sine law, and the cosine law, including problems arising from real-world applications, and describe applications of trigonometry in various occupations.

D. **DATA MANAGEMENT**
By the end of this course, students will:
1. collect, analyse, and summarize two-variable data using a variety of tools and strategies, and interpret and draw conclusions from the data;
2. demonstrate an understanding of the applications of data management used by the media and the advertising industry and in various occupations.

ASSESSMENT BREAKDOWN INCLUDING CATEGORIES AND WEIGHTINGS.

Formative assessments are learning practices that provide important feedback to student progress and include homework checks, exit tickets, self assessments to name a few.
Summative assessments form the foundation for final mark allocation at the end of a unit, term and exam.

CATEGORIES	% WEIGHT OF FINAL GRADE
Knowledge	25
Application	25
Thinking	10
Communication	10
Final Examination	30
TOTAL	**100**

Unit	Unit Breakdown	Assessments
Measurement and Geometry	Optimize Perimeter, Area. Surface Area and Volumes. Area, Volume and surface area where applicable of Prisms, Triangles, Circles, Cylinders, Cones, Triangular Prisms, Spheres.	Quiz, Tests and/or Assignments
Trigonometry	Trigonometry ratios with acute and obtuse angles Pythagorean's Theorem, Sine Law, Cosine Law, Applications of Trig.	Quiz, Tests and/or Assignments
Two Variable Statistics	Two-variable data sets, surveys, line of best fit	Quiz, Tests and/or Assignments
Apply Data Management	Statistical measures, indices, bias. Critical Analysis	Quiz, Tests and/or Assignments
Graphical Models	Linear, Quadratic, Exponential Models	Quiz, Tests and/or Assignments
Algebraic Models	Exponential Laws, Rational Exponents, Applications of Exponential Relations	Quiz, Tests and/or Assignments
Annuities and Mortgages	Annuities, Mortgages, and Amortization	Quiz, Tests and/or Assignments
Budgeting	Saving Plans, Cost of Renting and Owning a Home, Living Expenses	Quiz, Tests and/or Assignments

LEARNING SKILLS Learning Skills will be reported on the student's report card. The following chart indicates the skills and look-fors for each student.

WORKS INDEPENDENTLY	TEAMWORK	ORGANIZATION	WORK HABITS/HOMEWORK	INITIATIVE	SELF-REGULATION
The student: ▪ accomplishes tasks independently ▪ accepts responsibility for accomplishing tasks ▪ follows instructions ▪ regularly completes assignments on time and with care ▪ uses time effectively	**The student:** ▪ works willingly and cooperatively with others ▪ listens attentively, without interrupting ▪ takes responsibility for his/her share of the work to be done ▪ helps to motivate others, encouraging them to participate ▪ shows respect for the ideas and opinions of others	**The student:** ▪ organizes work when faced with a number of tasks ▪ devises and follows a coherent plan to complete a task ▪ demonstrates ability to organize and manage information ▪ follows an effective process for inquiry and research	**The student:** ▪ completes homework on time and with care ▪ follows directions ▪ shows attention to detail ▪ perseveres with complex projects that require sustained effort ▪ applies effective study practices	**The student:** ▪ seeks out new opportunities for learning ▪ seeks necessary and additional information ▪ requires little prompting to complete a task, ▪ approaches new learning situations with confidence and a positive attitude ▪ seeks assistance when needed	**The student:** ▪ sets individual goals and monitors own progress ▪ seeks clarification or assistance when needed ▪ reflects and assesses critically own strengths, needs and interests ▪ perseveres and makes an effort when responding to challenges

Additional Information:
- Students are reminded to have a scientific calculator, graphing paper and other appropriate materials for the course.
- Additional help is available through your teacher.
- Access to the Ontario Educational Resource Bank (OERB) is at http://resources.elearningontario.ca/
  The login for use by the Peel District School Board's students is
  > Student Login: pdsbstudent
  > Student Password: oerbs
- Visit http://www.khanacademy.org/ for mini lessons on topics covered in class.
- Mathematics Contests for students in Grade 12:
  - Canadian Senior and Intermediate Math Contests: register in the first week of October; contest written in November
  - Euclid Contest : register during the first week in March; contest written in April.
    Visit www.cemc.uwaterloo.ca for additional details.

Clarkson S.S. Assessment & Evaluation Policy

CHEATING:
Students are expected to demonstrate **HONESTY** and integrity and submit assessments that are reflective of their own work. Cheating is defined as completing an assessment in a dishonest way through improper access to the answers. Examples include, but are not limited to; using another student's work as your own, using an unauthorized reference sheet during an assessment, receiving / sending an electronic message to another student with test questions / answers, etc.

In order to ensure that all assessments are free from cheating,

Students will:
• review school policy with regards to academic honesty • submit their own work for evaluation to show evidence of skill and knowledge • use only teacher approved materials during an evaluation • demonstrate the qualities of good character and good intention (honesty, caring, respectful, responsibility,) when preparing evidence of their learning.

If a student cheats on an assessment,

Students may be:
• required to complete an alternate evaluation under direct supervision in a timely manner • required to write a reflective piece which demonstrates an understanding of the character attribute of honesty. • assigned a mark deduction • referred to a vice-principal • assigned a zero.

Plagiarism:

Students are expected to demonstrate **HONESTY** and use proper citations and referencing when completing assessments. Plagiarism is defined as the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work. Examples include, but are not limited to; copying another's project (portions or whole) and paraphrasing parts of a book or article without reference or citation.

In order to ensure that all assessments are free from plagiarism,

Students will:
- Be required to complete a workshop in correct documentation   - produce their own work   - give credit through appropriate citations and referencing when quoting or paraphrasing the work of others   - be diligent in maintaining and protecting their own work   - seek clarification or assistance from teachers or other available resources

If an assessment is plagiarized,

Students may be:
- required to rewrite or resubmit all or parts of the assignment   - referred for remedial lessons on proper citation and references   - required to do a reflection on the character attribute of honesty   - referred to a vice-principal   - required to sign a contract with the administration and teacher about commitment to academic honesty   - assigned a zero.

LATE ASSIGNMENTS – assignments submitted after the due date and before the absolute deadline.

Students are expected to demonstrate **RESPONSIBILITY** and submit all assessments by the established due date. Students are responsible for providing evidence of their achievement of the overall course expectations within the time frame specified by the teacher and in a form approved by the teacher. There are consequences for not completing assignments for evaluation or for submitting those assignments late.

In order to ensure that all evaluations are submitted by the established due date,

Students will:
- record due dates in personal organizers   - consider other commitments including co-curricular activities in planning assignment completion   - negotiate alternate due date well before due date, not last minute (a minimum of 24 hours in advance or at teachers discretion)   - find out what they missed during absences   - use school support systems (i.e. special education, counselors, extra help, …)

If an evaluation is submitted **after** the due date

Students :
- must notify the teacher and explain why the assignment was not submitted on the due date – in grades 9 & 10 a note from a parent/guardian may be required   - marks may be deducted for late assignments   - may be required to complete the assignment with supervision   - may be referred to a school based support team or a vice-principal   - may be placed on a contract for assignment completion

MISSED ASSIGNMENTS – **assignments either not submitted or submitted after the absolute deadline**
Excerpt from Policy 14.

In order to ensure that all evaluations are submitted,

Students will:
• be responsible for meeting and knowing absolute deadlines for missed assignments • use personal organizers to manage time and meet deadlines • be responsible for maintaining on- going communication with their teacher • take responsibility for missed work during all absences .

If an evaluation is submitted **after** the **absolute** deadline,

Students:
• must notify the teacher and explain why the assignment was not submitted • students may be asked to provide a note from a parent/guardian • may be required to complete the assignment or an alternate assignment under supervision • may be referred to a school based support team or a vice-principal • may be placed on a contract for assignment completion • may be involved in an action plan to complete the required assignment within a given time frame • may be assigned a zero.

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_____   _____   _____
Parent/Guardian Signature   **Student Signature**   **Date**