

CLARKSON SECONDARY SCHOOL

Course Code: MDM 4U

Course Name: Mathematics of Data Management
Grade 12 University

Prerequisite:

Functions, Grade 11, University Preparation, (MCR 3U0)

or

Functions and Applications, Grade 11, University/College Preparation, (MCF 3M0)

Material Required:

Textbook Replacement Cost: \$100.00

Course Description

This course broadens students' understanding of mathematics as it relates to managing data. Students will apply methods for organizing and analysing large amounts of information; solve problems involving probability and statistics; and carry out a culminating investigation that integrates statistical concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. Students planning to enter university programs in business, the social sciences, and the humanities will find this course of particular interest.

Overall Course Expectations

A. COUNTING AND PROBABILITY

By the end of this course, students will:

1. solve problems involving the probability of an event or a combination of events for discrete sample spaces;
2. solve problems involving the application of permutations and combinations to determine the probability of an event.

B. PROBABILITY DISTRIBUTIONS

By the end of this course, students will:

1. demonstrate an understanding of discrete probability distributions, represent them numerically, graphically, and algebraically, determine expected values, and solve related problems from a variety of applications;
2. demonstrate an understanding of continuous probability distributions, make connections to discrete probability distributions, determine standard deviations, describe key features of the normal distribution, and solve related problems from a variety of applications.

C. ORGANIZATION OF DATA FOR ANALYSIS

By the end of this course, students will:

1. demonstrate an understanding of the role of data in statistical studies and the variability inherent in data, and distinguish different types of data;
2. describe the characteristics of a good sample, some sampling techniques, and principles of primary data collection, and collect and organize data to solve a problem.

D. STATISTICAL ANALYSIS

By the end of this course, students will:

1. analyse, interpret, and draw conclusions from one-variable data using numerical and graphical summaries;
2. analyse, interpret, and draw conclusions from two-variable data using numerical, graphical, and algebraic summaries;
3. demonstrate an understanding of the applications of data management used by the media and the advertising industry and in various occupations.

E. CULMINATING DATA MANAGEMENT

INVESTIGATION By the end of this course, students will:

1. design and carry out a culminating investigation* that requires the integration and application of the knowledge and skills related to the expectations of this course;
2. communicate the findings of a culminating investigation and provide constructive critiques of the investigations of others.

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
<p>The student:</p> <ul style="list-style-type: none"> ▪ accomplishes tasks independently ▪ accepts responsibility for accomplishing tasks ▪ follows instructions ▪ regularly completes assignments on time and with care ▪ uses time effectively 	<p>The student:</p> <ul style="list-style-type: none"> ▪ 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 	<p>The student:</p> <ul style="list-style-type: none"> ▪ 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 	<p>The student:</p> <ul style="list-style-type: none"> ▪ 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 	<p>The student:</p> <ul style="list-style-type: none"> ▪ 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 	<p>The student:</p> <ul style="list-style-type: none"> ▪ 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:
<ul style="list-style-type: none">• 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:
<ul style="list-style-type: none">• 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