



**COURSE OVERVIEW 2023-2024**

Course Name:	Mathematics of Data Management	Course Code:	MDM 4U
Course Type:	Grade 12 University Preparation	Credit Value:	1.0
Teachers(s):	Ms Dymock		

**Course Description:**

This course broadens students' understanding of mathematics as it relates to managing data. Students will apply methods for organizing large amounts of information; solve problems involving probability and statistics; and carry out a culminating project that integrates statistical concepts and skills. Students will also refine their use of 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.

<http://www.edu.gov.on.ca/eng/curriculum/secondary/math1112currb.pdf>

**Prerequisite: Functions and Applications, Grade 11, University/College Preparation, or Functions, Grade 11, University Preparation**

**Course Overall Expectations:**

Strand	Overall Expectations
Counting and Probability	solve problems involving the probability of an event or a combination of events for discrete sample spaces;
	solve problems involving the application of permutations and combinations to determine the probability of an event.
Probability Distributions	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;
	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.
Organization of Data for Analysis	demonstrate an understanding of the role of data in statistical studies and the variability inherent in data, and distinguish different types of data;
	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.
Statistical Analysis	analyse, interpret, and draw conclusions from one-variable data using numerical and graphical summaries;
	analyse, interpret, and draw conclusions from two-variable data using numerical, graphical, and algebraic summaries;
	demonstrate an understanding of the applications of data management used by the media and the advertising industry and in various occupations.

<b>Course Overall Expectations:</b>	
<b>Strand</b>	<b>Overall Expectations</b>
<b>Culminating Data Management Investigation</b>	<b>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;</b>
	<b>communicate the findings of a culminating investigation and provide constructive critiques of the investigations of others.</b>

**Assessment and Evaluation Strategies:**

The purpose of assessment and evaluation is to improve student learning. Assessment and evaluation is based on the provincial curriculum expectations and the achievement levels outlined in the curriculum document. In order to ensure that assessment and evaluation are valid and reliable, and that they lead to the improvement of student learning, teachers use a variety of strategies throughout the course, including: providing students with feedback about their work (known as assessment for learning), helping to set learning goals and monitor their own progress (known as assessment as learning), and evaluation and reporting of progress in the form of grades and marks (known as assessment of learning).

<b>Unit Overview</b>	<b>Assessment and Evaluation Methods (May include major evaluations)</b>
<b>Permutations and Organized Counting and Combinations</b>	<b>quizzes, performance tasks, assignments, projects, unit tests</b>
<b>Binomial Theorem and Introduction to Probability</b>	
<b>Statistics of One Variable</b>	
<b>Statistics of Two Variables</b>	
<b>Probability Distributions</b>	
<b>Normal Distributions</b>	
<b>Applications of Linear Systems</b>	
<b>Course Culminating Activity/Independent Study Project</b>	<b>proposal, data collection, statistical analysis, presentation, final mini analysis</b>
<b>Cumulative Exams</b>	

**Assessment and Evaluation Categories and Weights:**

Achievement Chart Categories		Evaluation/Weight of Marks	
Achievement Category	Percentage	Evaluation	Percentage
Knowledge/Understanding	35	Term Evaluation	70
Thinking/Inquiry	15	Final Evaluation	
Communication	15	• ISP	15
Application	35	• Cumulative	15

### Learning Skills and Work Habits Assessment:

The development of learning skills and work habits is an integral part of student learning. These skills are:

- Responsibility
- Organization
- Independent Work
- Collaboration
- Initiative
- Self-Regulation

Learning skills and work habits influence student achievement and are included as a formal part of the assessment and evaluation process. Learning skills and work habits will be assessed through a variety of teacher strategies. ( e.g. observation, student /teacher conference, self-reflection, checklists, exit cards, etc.) These important learning skills and work habits will be formally reported on the Provincial Report Card according to the following scale: E- Excellent, G- Good, S- Satisfactory, N- Needs Improvement.

### Academic Dishonesty - Cheating and Plagiarism:

Learning tasks that students complete, as well as all assignments, tests and exams which students submit for evaluation must be their own work. Cheating and plagiarism is a serious offence which will not be condoned. Academic consequences will result.

### Test Policy:

According to the Growing Success Document (2010) a student must fulfill his/her responsibilities and commitments within the learning environment, including completing all types of assessments according to agreed-upon timelines.

It is the math department expectation that all students will write tests on the date set out by the classroom teacher. In the event of an illness, emergency, or other significant situation, an exception can be made, provided sufficient documentation is given to the classroom teacher. Please note that parental approval is not a legitimate reason for missing an evaluation. If an acceptable absence is known prior to the assessment date, alternate arrangements must be made with the classroom teacher in advance.

If this expectation is not met, the evaluation will be completed but may not contribute to the student's course marks.

### Late and Missed Assignments - Student Roles and Responsibilities

Students are expected to:

- be responsible for providing evidence of their achievement of the overall expectations within the time frame specified by the teacher, and in a form approved by the teacher;
- understand that there will be consequences for not completing assignments for evaluation and/or for submitting those assignments late;
- use class time productively;
- in extenuating circumstances, request an extension from the teacher before the due date.

**Mark deductions for late and missed assignments may apply to major assignments only.**

**References:** *TVDSB Assessment & Evaluation Policy, September 2011; Growing Success - Assessment and Evaluation, and Reporting in Ontario Schools, 2010. Student Planner and School Web site*