Data Management – MDM4U
Course Profile Outline

Course Description/Rationale/Overview

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

Prerequisite: MCR3U

Class Requirements:	Course Requirements/Department Policies
Student Responsibility	Attendance requirement
Students must seek assistance from the teacher and fellow students for all work missed due to absence and must make arrangements to complete missed work.	Students are required to log in at least once per week on course activities. Students are expected to spend approximately 7 hours per week on both online and offline learning activities. Students are required to keep a Student Learning Log for each course documenting online and offline activities.
	What is considered an Absence?
	If a student fails to login in two consecutive weeks, it will be considered as one absence. When a student has 2 absences, the school will issue a warning letter.
	By mid-term (within two months from the start of a course), if a student fails to complete 40% of course work, the principal may ask the student to withdraw from the course.

Evaluation

Assignments, projects, quizzes, exit cards, tests, unit tests, mid-term evaluation, culminating activity, and final examination

---

Curriculum Strands	Achievement Categories		Learning Skills
1. Counting and Probability	• Knowledge and understanding	25%	• Initiative
2. Probability Distributions	• Application	25%	• Work Habits and Homework
3. Organization of Data for Analysis	• Thinking and Inquiry	30%	• Organization
4. Statistical Analysis	• Communication	20%	• Independent work
5. Culminating Data Management Investigation			• Teamwork

Evaluation		Final Mark	
Term Work		Term Work	70%
Assignments	20%	Final	30%
Quizzes	15%		
Unit Tests	20%		
Mid-term	15%	Total	100%
Culminating Activity	10%		
Final Examination	20%		

Course Outline

By the end of this course, students will:

1. **Counting and Probability** (34 Hours)
- be able to use proper statistics terminology
- solve problems involving the probability of an event or a combination of events for discrete sample spaces.
- solve problems applying counting techniques of distinct items
- apply counting principles to calculating probabilities and explore the notion of variability.
- use math concepts to calculate the number of permutations and combinations

2. **Probability Distributions** (24 Hours)
- understand probability distributions for discrete random variables
- learn to represent the probability distribution through various ways: number, graph, chart, histogram, and algebra
- navigate various probability distributions such as Binomial, Hypergeometric, and Normal distributions and solve related problems from a variety of applications
- learn about the probability histogram and frequency histogram and perceive their inconsistency to be the result of variability

3. **Organization of Data for Analysis** (12 Hours)
- be able to organize data for analyzing
- demonstrate an understanding of the role of data in statistical studies
- distinguish between different types of data, explore their source, refine, and categorize data for analysis
- design an effective survey and collecting and analyzing data
- explain the characteristics of a good sample, compare sampling techniques

4. **Statistical Analysis** (24 Hours)
- analyze, interpret, and draw conclusions from one and two-variable data using numerical and graphical summaries, which is introduced under the notion of regressions
- be able to understand the applications of data management used by the media and the advertising industry and in various occupations.
- gain the skill of applying statistical techniques for measuring relationships between two variables, such as correlation coefficient, linear regression, and statistical causation.

5. **Culminating Data Management Investigation** (16 Hours)
- prepare to complete the culminating project outlined in the Culminating Data Management strand.
- engage in activities in which they apply several of the techniques/tools of the course to answer significant questions.
- gains valuable experience with these two expectations, which form part of the culminating project.
- present their culminating investigation, and critique that of others

Resources:

Textbook: Data Management 12 – McGraw hill Ryerson Edition 2014

Supplementary Teaching Materials:

Worksheets
Hands out
You Tube Videos
Online Resources
Laptop with Microphone & Camera
Online Learning Platform
Calculator Language Assistance (Digital Dictionary and Terminology Sheets)

https://www.youtube.com/channel/UCUEPQKvPn2jk8vVXaD7_JDw/search?query=mdm4u

Statistics Canada: http://www.statcan.ca

Environment Canada: www.ec.gc.ca