Sir Wilfrid Laurier Secondary School
Grade 12 Mathematics of Data Management – MDM 4U
Course Outline

Course Description

This course broadens students' understanding of mathematics as it relates to managing data. Students will apply methods for organizing and analyzing 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.

Strands and Subgroups

Counting and Probability	Organization of Data for Analysis
● 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	● 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	**Probability Distributions**
● analyze, interpret, and draw conclusions from one variable data using numerical and graphical summaries ● analyze, 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	● 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

Culminating Investigation

● design and carry out a culminating investigation that requires the integration and application of the knowledge and skills related to the expectations of the course
● communicate the findings of a culminating investigation and provide constructive critiques of the investigations of others

Evaluation

The final report card mark will be determined as follows:

Term Mark	70% of final grade
Culminating Investigation	10% of final grade
Final Exam	20% of final grade

NOTE: The culminating investigation (summative) will be assessed through stages that will require out of class time to complete.

The term mark (70%) will be evaluated on levels, where a Level 3 (70-79%) is provincial standard.

Guidelines for Missed Evaluations and Academic Fraud

1. Upon missing a test or presentation, students will be required at the teacher's discretion, either to:
   a) Make arrangements with the teacher for a make-up; or
   b) Write the missed test Friday morning at 7:30 a.m. of that week with the administration.
   Failure to complete the missed test/presentation according to the negotiated schedule will result in a mark of zero.

   Note: Certain forms of formal summative evaluations (exams, summative project presentations or tasks, etc.) are time sensitive. This means they must be completed at and within a specific time. Students must be present and prepared for these summative evaluations. Any absence will result in a mark of **zero**, unless validated by an official certificate. (ex. Medical Certificate).

2. If an assignment is late or incomplete, a student will be provided with a second opportunity. Students who are provided with a second opportunity, **shall complete the required assignment within five school days**. If no evidence is forthcoming after five days, a mark of zero will be assigned.

3. Copied, borrowed or stolen work provides no evidence of learning. Teacher will document and archive the work in question. Students may be allowed to resubmit the assignment. The teacher and administrator will define the parameters for the completion of this task.

General Course Information

Students must bring the following materials to each class:
   ➢ textbook
   ➢ separate Math binder (to hold notes, tests, quizzes, handouts)
   ➢ pencil case (to hold pencils, erasers, ruler, coloured pens)
   ➢ scientific calculator

*The text is **Mathematics of Data Management**, Nelson ($99.95 + HST). The student will be issued a text, and will be responsible for the cost of replacement/repair, if the text is lost or damaged.*

Desmos is a free online graphing calculator that does regressions: https://www.desmos.com/calculator
Fathom is a useful software program on most school machines that does graphs and statistical analysis. Also found here: http://concord.org/fathom-dynamic-data-software *starting at $5.25 for a 1-yr license.*

Course Website

News about mathematics and statistics related to the course is at: *http://sites.google.com/site/sirwildata*
Check the sidebar for our course code to view the daily lessons and major assignments.