Course Profile

Mathematics of Data Management, Grade 12
MDM4U

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.

Level:	University	**Credit Value:**	1.0	**Program Enhancement Fee:**
Pre-requisite:	MCF3M or MCR3U	**Department:**	Mathematics	None

Textbooks & Resources:

- Growing Success: Assessment, Evaluation and Reporting in Ontario Schools, 2010
- The Ontario Curriculum, Grades 11 and 12: Mathematics, 2007, Revised
- Mathematics of Data Management, McGraw-Hill Ryerson (Replacement Cost: $75.00)
- Printed Packages provided by the teacher

Course Evaluation: Student Evaluation consists of three components…

1) Learning Skills & Work Habits:

Students are evaluated on 6 Learning Skills & Work Habits. They are:

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

These six attributes are evaluated on a scale of Excellent (E), Good (G), Satisfactory (S) & Needs Improvement (N) and reported on the report card. They **are not** included in the course mark, unless specified in the curriculum expectations.

2) Term Mark (Assessment of Learning):

Student performance standards for knowledge and skills are described in the curriculum Achievement Chart. The curriculum is assessed in four categories:

Knowledge and Understanding	20%
Thinking and Inquiry	15%
Communication	10%
Application	25%

Evaluation of these four categories generates the term mark. **This term mark accounts for 70% of the final mark.**

It is the student's responsibility to submit evidence of learning.

3) Final Evaluation (Assessment of Learning):

The final evaluation, administered at or towards the end of the course is based on the evidence shown to the right. The final evaluation accounts for 30% of the final mark.

The final evaluation consists of (out of 30%):

Culminating Task	5%
Final Exam	25%

Final Mark = 70% Term Mark + 30% Final Evaluation

Please retain this page in the front of your notebook for future reference.

Toronto District School Board

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Course Outline:

Unit	Description	Approximate Length	Major Unit Evaluation
1) Permutations and Organized Counting	In this unit, students will solve introductory counting problems involving permutations by using tree diagrams, Pascal's Triangle, and the multiplicative and additive counting principles.	15 days	Unit Test
2) Combinations	In this unit, students will solve problems involving an event or a combination of events for discrete sample spaces using the counting principles of combinations. They will continue to solve counting problems involving combinations using the multiplicative and additive counting principles, Venn Diagrams, and the principles of inclusion and exclusion.	10 days	Unit Test
3) Probability	In this unit, students will solve problems involving the probability of an event or a combination of events for discrete sample spaces. They will solve problems involving the application of permutations and combinations to determine the probability of an event.	15 days	Unit Test
4) Statistics of One Variable Part 1	In this unit, students will demonstrate an understanding of the role of data in statistical studies and the variability inherent in data, and distinguish different types of data. Students will 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. Students will learn about the applications of data management used by the media and the advertising industry and in various occupations.	15 days	Unit Test
4) Statistics of One Variable Part 2	This is an Independent Study Unit where students will analyse, interpret, and draw conclusions from both one-variable and two-variable data using numerical and graphical summaries.	15 days	Unit Test
5) Probability Distributions	In this unit, students will 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.	10 days	Unit Test
6) The Normal Distribution	In this unit, students will 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.	6 days	Unit Test

Note: The order of the units of study may change due to student needs and resources available during the course.

General Information

Refer to the agenda for Wexford CSA Academic Conduct & Evaluation policies.

How to seek extra help:

1) Speak to your subject teacher and book a time to meet (Students & Parents).
2) Speak to a Peer Helper
3) Use reliable sources on the Internet
4) Speak to your Guidance Councellor (Students & Parents) who can guide you to other sources.

Recommended Internet Resources:
www.khanacademy.org
www.resources.elearningontario.ca
www.explorelearning.com
www.math.com
ca.ixl.com

Homework is assigned on a regular basis. Homework completion and regular attendance are key to being succesful in this course.