

# Bishop Macdonell Catholic High School

## COURSE OVERVIEW

**COURSE TITLE:** MATHEMATICS OF DATA MANAGEMENT, Grade 12, University Preparation

**COURSE CODE:** MDM 4U1

**CREDIT VALUE:** 1.0

### **COURSE DESCRIPTION:**

This course broadens students' understanding of mathematics as it relates to managing information. Students will apply methods for organizing large amounts of information; apply counting techniques, probability, and statistics in modeling and solving problems; and carry out a culminating project that integrates the expectations of the course and encourages perseverance and independence. Students planning to pursue university programs in business, the social sciences, or the humanities will find this course of particular interest. This course helps students to meet the Ontario Catholic Graduate Expectations by enabling each person to become a reflective and creative thinker who evaluates situations and solves problems reflectively and creatively.

### **HOW THIS COURSE SUPPORTS THE ONTARIO CATHOLIC GRADUATE EXPECTATIONS:**

This course encourages the Catholic learner to develop his/her God-given gifts and abilities to promote growth toward personal responsibility in preparation for a chosen career path. Throughout this course, emphasis should be placed on moral, ethical, and realistic decision-making in an effort to build responsible citizenship. The classroom environment should instill a spirit of cooperation, rather than competition amongst students, and foster a collaborative sense of community. This course provides many opportunities for students to work effectively as interdependent team members and to acknowledge and respect others for their opinions. Please see the Course Calendar / Agenda Book for a listing of the Ontario Catholic Graduate Expectations.

### **OVERALL EXPECTATIONS:**

By the end of this course, students will:

#### **Statistical Analysis** (*Units 1 and 2*)

- 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

#### **Organization of Data for Analysis** (*Unit 3*)

- 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

#### **Counting and Probability** (*Units 4 and 5*)

- 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** (*Unit 6*)

- Demonstrates an understanding of discrete probability distributions, represent them numerically, graphically, and algebraically, determine expected values, and solve problems from a variety of application
- 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 Data Management Investigation** (*Final Culminating Activity*)

- 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
- Communicate the findings of a culminating investigation and provide constructive critiques of the investigations of others

**UNIT TITLES: (Approximate Time and Sequence)**

Unit 1	One Variable Statistics and Normal Distributions	12 periods
Unit 2	Two Variable Statistics and Using Technology	12 periods
Unit 3	Collecting and Organizing Data	10 periods
Unit 4	Combinatorics	12 periods
Unit 5	Probability	12 periods
Unit 6	Probability Distributions	14 periods

**ASSESSMENT and EVALUATION:**

<b>COURSE GRADE WEIGHTING:</b> Term Work 70% Final Assessment 30% • Culminating Project (10%) • Final Exam (20%)	<b>CATEGORY WEIGHTING:</b> Knowledge and Understanding 30% Application 30% Thinking 20% Communication 20%
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Students will be assessed using a variety of techniques including: formative and summative quizzes, summative unit tests, assignments, investigations, and a formal final exam. In addition, students are expected to develop, complete and present a culminating project as described in the overall expectations that will comprise 10% of their overall grade.

**LATE AND MISSED ASSIGNMENTS:**

Students are expected to complete all evaluation activities. Special considerations for late or missed assignments will only be given for **legitimate reasons**. Examples of legitimate reasons include sickness (**ONLY if confirmed ahead of the assessment date**) or family emergencies. A doctor's note may be required.

- If you are sick and are missing a test you must confirm your absence before the start of class.
- If you are at school for part of the day but are going home sick, you must still hand in your assignments before you leave, and if it is a test day then you must speak with your teacher before you go home.

**Considerations**

1. If the evaluation was done during class time, the student will be given an opportunity to complete the activity at a mutually agreed upon time.
2. If the evaluation was required to be submitted on a due date, an extension will be granted to the student, the length of which will be determined by the teacher.
3. If a student has been excused from class due to a school function, considerations will only be given if prior discussion has occurred with the teacher. Always communicate with your teacher, don't assume they know which activities you are involved with and what your schedules are for those activities.

**Non-Legitimate Reasons**

When a student fails to complete an assessment or evaluation activity because of a non-legitimate reason, an "M" will be recorded in the teacher records indicating that the activity was missed. Examples of non-legitimate reasons include skipping class on the date that an evaluation is done or required to be submitted, not confirming an absence ahead of time, or failing to complete assignments because of poor time management skills. Failure to complete assessment and evaluation activities reduces the body of evidence upon which the teacher can evaluate student achievement of curriculum expectations and could jeopardize the granting of a credit for the course.

*Please do not leave your studying and assignment completion to the last minute...always plan ahead!*

**ACADEMIC HONESTY**

Academic honesty is expected of all students. In accordance with the Ontario Catholic School Graduate Expectations, a student will:

- √ Achieve excellence, originality and integrity in one's own work and support these qualities in the work of others.
- √ Respect the rights, responsibilities and contributions of self and others.

Cheating is the direct attempt to use another's work as one's own, and act of deliberate dishonesty. Plagiarism is a form of cheating that is a serious legal, unethical and academic offense, be it intentional or unintentional. Students have the responsibility to ensure that all work submitted is their own or appropriately attributed to its source. Responses to academic dishonesty may include:

- a) Repeating the assignment
- b) Completing an alternative assignment
- c) Mark reduction
- d) Mark of zero

**GENERAL COURSE INFORMATION:**

- Learning Skills: regular attendance, working independently, teamwork, organization, work habits, initiative, risk-taking, time management, perseverance, curiosity and a love of learning are all essential to success in this course.
- A scientific calculator, graph paper, pens, pencils and a memory stick are required for this course.
- Textbook #: \_\_\_\_\_. **Replacement cost for a lost textbook is \$85.00.**

**APPROPRIATE USE OF GRAPHING CALCULATORS:**

Students will be provided with graphing calculators to be used at school only. In keeping with Board Policy on Telecommunications: Any malicious attempt to harm or destroy the calculator is prohibited and may result in financial compensation and/or other disciplinary action consistent with the School Code of Behaviour, Board Policy and/or the Education Act. Likewise, **theft or loss, through negligence, of the calculator will result in a cost replacement by the student/parents of \$150.00.**

**ASSESSMENT RESULTS:**

Each student is asked to keep **ALL** quizzes, tests and assignments neatly organized in their notebooks, and to make any necessary corrections. This can be one way for students to keep track of their progress in the course. All solutions will be posted in the classroom so please make sure you make the necessary corrections.



**WEBSITE:**

There is a class website where you will find class information such as our weekly schedule, announcements, unit planners, online resources and copies of the handouts and notes from class. I strongly suggest you visit the site daily!

The website is [www.petrinmath.weebly.com](http://www.petrinmath.weebly.com) and the **password** is \_\_\_\_\_.

**TEACHER CONTACT INFORMATION:**

If you have any questions or concerns please contact Mrs. Petrin at the school.

Work Phone #: (519) 822-8502 ext. 235

Email: [lisanne.petrin@wellingtoncdsb.ca](mailto:lisanne.petrin@wellingtoncdsb.ca)

**PARENT/GUARDIAN/STUDENT SIGNATURE:**

My signature below indicates that I have read and understood the course overview.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**This course overview document must be kept in the student's notebook.**