***East York Collegiate: MDM4U Fall 2015***

***TEACHER:* Mr. Singh, Mr. Kyritsis**

***DESCRIPTION:***

This course broadens students’ understanding of mathematics as it relates to managing

information and focuses on a culminating project throughout the course. Successful completion of MDM 4U will prepare students for any undergraduate course in probability and statistics. Such courses are typically a requirement for students in their second year of most four-year undergraduate programs in both the sciences and humanities. In particular, students planning to pursue university programs in business, social sciences or the humanities will find this course of relevance.

The course is comprised of five strands: Organization of Data for Analysis; Counting and Probability; Probability Distributions; Statistical Analysis; and Culminating Data Management Investigation. The first strand, Organization of Data for Analysis, looks at finding and retrieving the data needed to answer significant questions. The strand on Counting and Probability will provide students with the opportunity to solve counting problems, use counting techniques to determine and interpret theoretical probabilities, and design and carry out simulations in order to estimate probabilities. In the strand, Probability Distributions, will learn discrete and continuous probability distributions, solve related problems from a variety of applications. In the strand, Statistical Analysis, students will acquire the tools to analyse data involving one variable and solve problems involving the normal distribution. Students will also describe the relationship between two variables, and assess the validity of statistics drawn from a variety of sources. The final strand, Culminating Data Management Investigation, asks students to complete a major project on a significant topic of their own choosing which requires them to integrate some of the expectations of the course. It also asks them to present their project to the class and to critique the projects of others.

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

***UNITS***

1. Statistics: working with information. Collecting & Organizing Data

2. Measures of Central Tendency & Spread

3. Statistics of Two Variables

4. Permutations, Combinations. Counting Techniques.

5. Probability & Probability Distributions

6. Normal Distribution.

7. Culminating Project

***COMPUTER BASED ASSIGNMENTS***

Presenting one and two variable statistics using Fathom and MS Excel, OpenOffice Calc, importing data from websites, exploring data from Statistics Canada, searching the Internet effectively, evaluating websites, using presentation software effectively, and completing the course project

***EVALUATION***

***Knowledge 50%***

***Communication 10%***

***Application 20%***

***Thinking Inquiry and Problem Solving 20%***

***Course Project + Final Exam = 10% + 20%***