**MMA 863: Introduction to Analytic Modelling**

**Syllabus - 2021**

***COURSE DESCRIPTION***

In this course we will review mathematical and statistical topics needed throughout the Master of Management Analytics program. We will review basic ideas around basic mathematics, probability and statistics required for understanding financial analytics and the relationship between statistics and probability distributions. We will also discuss random variables and hypothesis testing. In spite of its mathematical content, the course will emphasize understanding the intuition and use of mathematical techniques rather than the techniques themselves (e.g. solving a system of equations).

On completion of this course you will understand structured ways of thinking about data and models of multivariate data. This will be important background for material discussed later in the program; in particular, in marketing analytics, data acquisition and analysis, multivariate statistics, financial analytics, and pricing analytics.

To get the most from the course, you will need to review the material in the text prior to working through the online material.

***INSTRUCTOR***

Dr. Keith Rogers

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***REQUIRED TEXT***

Statistics for Analytics and AI, Second Edition. The text will be provided to you via a link on the portal.

***STATISTICAL PACKAGES***

Class discussion will use basic tools available in the Microsoft Excel spreadsheet package. The 'Analysis ToolPak' add-in for Excel will be required.

***ASSIGNMENTS AND EVALUATION***

Evaluation will be composed of three team assignments worth 20 % each; and one final exam worth 40%. The assignments will be due by 11:59 PM ET on the dates posted on the portal.

# ACADEMIC INTEGRITY

Teams may discuss the components of the project with others outside the team, but all submitted work must be individual for individual assignments and team's own work for team assignments. For additional information, please see Smith's policy on academic integrity at <http://business.queensu.ca/about/academic_integrity/index.php>.

***OFFICE HOURS***

Office hours will be held on May 14, May 16, April 28 and June 7. The program office will provide training on the technology used for office hours (Zoom). Between office hours, please use the portal forum. We will be active on the forum to answer questions.

***SESSION ACTIVITIES***

| Target Date | Activities |
| --- | --- |
| Prior to Opening Session | Complete S6 – Math Review  (Sequencing of S6 is Optional) |
| Prior to Opening Session | Complete S1 – Introductory Material |
| Tuesday, May 12 | Complete S2 – Probability |
| Wednesday, May 13 | Complete S3 – Discrete Random Variables |
| Thursday, May 14 | Scheduled Office Hours (Assignment 1)  Team Assignment 1 |
| Friday, May 15 | Complete S4 – Continuous Random Variables |
| Saturday, May 16 | Scheduled Office Hours (Assignment 2)  Team Assignment 2 |
| Tuesday, May 19 | Complete S5 – Hypothesis Testing |
| Tuesday, May 26 | Scheduled Office Hours (Assignment 3)  Team Assignment 3 |
| Saturday, June 6 | Office Hours (Review – Questions Only) |
| June 7 | Exam |