



Mathematics (MATH) 216

Computer-Oriented Approach to Statistics (Revision 4)

Status:

Replaced with new revision, see the [course listing](#) for the current revision

Delivery mode:

Individualized study online with eText

Credits:

3

Area of study:

Science

Prerequisites:

None. Fundamental mathematical skills are required, particularly the ability to do basic algebra. Reviews of basic mathematics are available at Athabasca University Library. **MATH 101** (a non-credit course) is suitable preparation for taking MATH 216, for those students concerned about their mathematical background. Familiarity with the Windows operating system is essential.


Precluded:

MGSC 301 , **MATH 215** . (MATH 216 may not be taken for credit if credit has already been obtained for MGSC 301 or MATH 215.)

Challenge:

MATH 216 is not available for challenge.

Faculty:[Faculty of Science and Technology](#) 

Both the midterm and final are closed-book, machine-marked exams in the Möbius online platform and are invigilated through [ProctorU](#) . See the Evaluation section of the syllabus for more information.

Notes:**[Mathematics Diagnostic Assessment](#)** 

This online test contains 70 questions that will help you assess your mathematical skills. Based on your score, we will recommend which Athabasca University mathematics course you are likely ready to take successfully.

The web-based statistical software used in MATH 216 is compatible with the following operating systems: Windows 10, 8.1, 8, and 7; Mac OS 10.12 – Sierra, 10.11 - El Capitan, 10.10 – Yosemite.

Overview

MATH 216 gives students a working knowledge and understanding of descriptive and inferential statistics and how statistics is applied in the sciences, social sciences, and business. An important feature of MATH 216 is its computer component, which teaches you how to use an industry standard statistical software application to apply the tools of statistics to make practical decisions, prepare reports in the workplace, and effectively complete papers and research projects in other university courses. We cannot underestimate the value of a course which encourages you to use computer software to apply the methods of statistics, in a society which is increasingly dependent on electronic sources of information such as intranet databases, external databases, the internet, electronic instruments, and point

of sales electronic terminals. MATH 216 is a multimedia course designed to appeal to a wide range of students with diverse learning styles.

Outline


- Unit 1: Descriptive Statistics
- Unit 2: Probability
- Unit 3: Probability Distributions
- Unit 4: Inference on One Sample
- Unit 5: Inference on Two Samples
- Unit 6: Bivariate Analysis

Learning outcomes


Upon successful completion of this course, you should be able to

- apply the basic principles of statistical analysis using statistical software.
- employ the tools of descriptive statistics to organize, summarize, and present information in a meaningful way.
- predict the likelihood of real-world events, based on rules of probability and common probability distributions.
- estimate and test hypotheses regarding characteristics of both single and multiple populations.
- identify patterns of relationships between qualitative variables.
- employ linear correlation and regression methods to analyze relationships between quantitative variables.
- responsibly use statistical methods by testing the underlying assumptions.

Evaluation

To **receive credit**  for MATH 216, you must achieve a mark of at least 50 percent on both the midterm and final examinations, and your composite


course grade must be at least **D (50 percent)** .

The midterm and final are closed-book, machine-marked exams in the Möbius online platform and are invigilated through **ProctorU** . Your exams must be requested in advance, and you must pay the ProctorU invigilation fees. You will have three (3) hours to complete each exam.


Note: You are expected to use a standard scientific calculator in each exam. Programmable calculators, graphing calculators (such as the TI83, etc.), computers, or any other mobile electronic devices may **not** used during the exams.

The weighting of the composite course grade is as follows:



Activity	Weight
Assignment 1	5%
Assignment 2	5%
Assignment 3	5%
Midterm Exam	35%
Assignment 4	5%
Assignment 5	5%
Assignment 6	5%
Final Exam	35%
Total	100%

To learn more about assignments and examinations, please refer to Athabasca University's **online Calendar** .

Materials

Larson, R., & Farber, B. (2019). *Elementary statistics: Picturing the world* (7th ed.). Pearson.  (eText)





eText

Registration in this course includes an electronic textbook. For more information on **electronic textbooks**  , please refer to our **eText Initiative site**  .

Online Resources at Pearson MyLab Website

- *Student's Solutions Manual*
- StatCrunch statistical software (also available at statcrunch.com)
- MyLab Study Plan (Optional)
- Multimedia Resources (Optional)

Important links

- › [Academic advising](#) 
- › [Program planning](#) 
- › [Request assistance](#) 
- › [Support services](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

Updated August 8, 2024

View **previous revision** [↗](#)
