

General Information.

Discipline: Mathematics

Course code: 201-2B4-AB

Ponderation: 2-2-2

Credits: 2

Prerequisite: Secondary IV mathematics

Objectives:

- 051C: To perform sampling and control tests
- 01E2: To process data statistically

Students are strongly advised to seek help from their instructor as soon as they encounter difficulties in the course.

Introduction. Collection, analysis and presentation of data are some of the means used to determine product quality and resolve production issues. This course will present the fundamentals of statistics, graphical techniques for analysis and presentation of process and experimental data, and determination of confidence intervals. Students will develop the ability to determine the appropriate statistical sampling plans, control tests and to process data statistically.

Teaching Methods. This course will be 60 hours, meeting three times a week for a total of 4 hours per week. The main techniques used will be the lecture and problem-solving sessions, class discussions and assigned reading for independent study. Regular homework involving a minimum of two hours per week should be expected. Students are responsible for all problems and exercises in the text relevant to material covered in class, as well as material covered in missed classes.

Reference. There is no required textbook for this course. A good reference for the course material is :

The Basic Practice of Statistics, 8th edition
by Moore, Notz and Fligner

Note that this book is not available for purchase at the bookstore.

Course Costs. A scientific calculator (\$15-\$20) is necessary.

Departmental Attendance Policy. Due to the COVID-19 health crisis, attendance policies may need to be adjusted by your teacher. Regular attendance is expected, and your teacher will inform you of any details or modifications as needed. Please note that attendance continues to be extremely important for your learning, but your teacher may need to define it in different terms based on the way your course is delivered during the winter semester.

Additional Software. In addition to LEA, Teams and Moodle, additional software may be used for the submission of essays or projects or for testing. Further details will be provided if applicable.

Class Recordings. Classes on Teams or other platforms may be recorded by your teacher and subsequently posted on Teams and/or LEA to help for study purposes only. If you do not wish to be part of the recording, please let your teacher know that you wish to not make use of your camera, microphone or chat during recorded segments. Any material produced as part of this course, including, but not limited to, any pre-recorded or live video is protected by copyright, intellectual property rights and image rights, regardless of the medium used. It is strictly forbidden to copy, redistribute, reproduce, republish, store in any way, retransmit or modify this material. Any contravention of these conditions of use may be subject to sanction(s) by John Abbott College.

Evaluation Plan. The Final Evaluation in this course consists of the Final Exam, which covers all elements of the competency. In the case an On-Campus Final Exam cannot be administered, the Final Evaluation will consist of the On-Campus Midterm Exam and/or the Major at-home Assessments. The Final Grade will be calculated based on one of the following scenarios:

Scenario 1:

 On-Campus Midterm On-Campus Final

Final Grade	
Problem Solving Sessions	20%
Minor Assessments	20%
On-Campus Midterm Exam after week 7	20%
On-Campus Final Exam	40%

Scenario 2

 On-Campus Midterm On-Campus Final

Final Grade	
Problem Solving Sessions	20%
Minor Assessments	20%
On-Campus Midterm Exam after week 7	40%
Two* At-Home Major Assessments after week 9	20%

* One At-Home Major Assessment if time does not permit two.

Scenario 3

 On-Campus Midterm On-Campus Final

Final Grade	
Problem Solving Sessions	20%
Minor Assessments	20%
Two At-Home Major Assessments	10%
On-Campus Final Exam	50%

Scenario 4

 On-Campus Midterm On-Campus Final

Final Grade	
Problem Solving Sessions	20%
Minor Assessments	30%
Two-Five At-Home Major Assessments	50%

Scenario 1 will be prioritized, but the grading scheme will move to another scenario if it is impossible to hold an On-Campus Midterm and/or an On-Campus Final.

The distribution of Minor Assessments will be given by your teacher on the first day of classes (see the supplement to this course outline). The Final Exam is set by the course committee, which consists of all instructors currently teaching this course, and is marked by each individual instructor.

Students must be available until the end of the final examination period to write exams.

Course Outline Change. Please note that course outlines may be modified if health authorities change the access allowed on-site.

Test Accommodations. Should you need a special accommodation to write the On-Campus Midterm or Final Exam, please read the [Math Department's policy](#).

Other Resources.

Math Website.

<http://departments.johnabbott.qc.ca/departments/mathematics>

Academic Success Centre. The Academic Success Centre, located in H-117, offers study skills workshops and individual tutoring.

College Policies.

Policy No. 7 - IPESA, Institutional Policy on the Evaluation of Student Achievement: <http://johnabbott.qc.ca/ipesa>.

Religious Holidays (Article 3.2.13 and 4.1.6). Students who wish to miss classes in order to observe religious holidays must inform their teacher of their intent in writing within the first two weeks of the semester.

Student Rights and Responsibilities: (Article 3.2.18). It is the responsibility of students to keep all assessed material returned to them and/or all digital work submitted to the teacher in the event of a grade review. (The deadline for a Grade Review is 4 weeks after the start of the next regular semester.)

Student Rights and Responsibilities: (Article 3.3.6). Students have the right to receive graded evaluations, for regular day division courses, within two weeks after the due date or exam/test date, except in extenuating circumstances. A maximum of three (3) weeks may apply in certain circumstances (ex. major essays) if approved by the department and stated on the course outline. For evaluations at the end of the semester/course, the results must be given to the student by the grade submission deadline (see current Academic Calendar). For intensive courses (i.e.: intersession, abridged courses) and AEC courses, timely feedback must be adjusted accordingly.

Academic Procedure: Academic Integrity, Cheating and Plagiarism (Article 9.1 and 9.2). Cheating and plagiarism are unacceptable at John Abbott College. They represent infractions against academic integrity. Students are expected to conduct themselves accordingly and must be responsible for all of their actions.

College definition of Cheating: Cheating means any dishonest or deceptive practice relative to examinations, tests, quizzes, lab assignments, research papers or other forms of evaluation tasks. Cheating includes, but is not restricted to, making use of or being in possession of unauthorized material or devices and/or obtaining or providing unauthorized assistance in writing examinations, papers or any other evaluation task and submitting the same work in more than one course without the teacher's permission. It is incumbent upon the department through the teacher to

ensure students are forewarned about unauthorized material, devices or practices that are not permitted.

College definition of Plagiarism: Plagiarism is a form of cheating. It includes copying or paraphrasing (expressing the ideas of someone else in one's own words), of another person's work or the use of another person's work or ideas without acknowledgement of its source. Plagiarism can be from any source including books, magazines, electronic or photographic media or another student's paper or work.

Course Content.

PART I: Exploring Data

Exploring Data: Variables and Distributions

- Picturing Distributions with Graphs
- Describing Distributions with Numbers
- The Normal Distributions

PART II: From Exploration to Inference

Producing Data

- Producing Data: Sampling
- Producing Data: Experiments

Probability and Sampling Distributions

- Introducing Probability
- Sampling Distributions
- Binomial Distributions

Foundations of Inference

- Confidence Intervals: The Basics
- Tests of Significance: The Basics
- Inference in Practice

PART III: Inference about Variables (optional)

Quantitative Response Variable

- Inference about a Population Mean

Categorical Response Variable

- Inference about a Population Proportion

PART IV: Inference about Relationships (optional)

- Two Categorical Variables: The Chi-Square Test