

## 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.

**Evaluation Plan.** A student's Final Grade will be calculated by the following distribution:

- |                                |     |
|--------------------------------|-----|
| - Class Tests (4):             | 48% |
| - Problem Solving Assignments: | 12% |
| - Final Exam:                  | 40% |

The Final Evaluation in this course consists of the Final Exam, which covers all elements of the competency.

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

## Other Resources.

*Math Website.*

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

*Math Help Centre.* Located in H-216; teachers are on duty from 8:30 until 15:30 to give math help on a drop-in basis.

*Academic Success Centre.* The Academic Success Centre, located in H-139, offers study skills workshops and individual tutoring.

## College Policies.

*Policy No. 7 - IPESA, Institutional Policy on the Evaluation of Student Achievement:* <https://www.johnabbott.qc.ca/wp-content/uploads/2021/05/Policy-No.-7-IPESA-FINAL.pdf>.

*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