STAT 2593: Probability and Statistics for Engineers

Fall 2023

Instructor:	Dylan Spicker	**Lectures:**	MWF 11:30-12:20, GH115
Email:	dylan.spicker@unb.ca	**Office Hours:**	By Appointment or Drop-In
Pronouns:	They/Them		(GH230A)

Probability spaces: combinatorial probability, conditional probability, and independence. Random variables: discrete distributions, continuous distributions, expectation, variance, and covariance; linear combinations. Statistics: descriptive and graphical statistics; sampling; distributions. Inference: point estimation, confidence intervals; hypothesis tests; paired data designs; two sample inference, linear regression.

Territorial Acknowledgement

This course acknowledges that the land on which we gather is the traditional unceded and unsurrendered territory of Wolastoqiyik (Maliseet). This territory is covered by the Treaties of Peace and Friendship which the Wolastoqiyik (Maliseet), Mi'kmaq, and Passamaquoddy peoples first signed with the British Crown in 1725. The treaties did not deal with surrender of lands and resources but in fact recognized Wolastoqey (Maliseet), Mi'kmaq, and Passamaquoddy title and established the rules for what was to be an ongoing relationship between nations.

I would encourage you to take a moment to reflect on this, deeply, and what it means not only for your education but also your life day-to-day.

Learning Environment: In this course I will endeavour to create a welcoming environment for all students, so as to best facilitate everyone's learning. I invite you, if you are comfortable, to share the name and pronouns that you would like us to use in this space (whether that is to me directly over email or in person, or to your classmates on the platforms on which we interact). I also invite you to share with me any other information regarding your circumstances which is important for me to take into consideration during this course. If I can be of support to you, or help put you in touch with resources you require, I will.

Course Website: Please visit `https://lms.unb.ca/` for all course related material. It may be worth considering your email and notification settings as Learn will be the primary means of communication for course updates throughout the term.

D2L Brightspace Support for Students:
`https://unbcloud.sharepoint.com/sites/adm/SitePages/D2L-Resources-for-Students.aspx`

Prerequisites: This course will rely on Calculus material (up to and including what was covered in MATH1013). While familiarity with the material is expected, and will not be revisited during lectures, please reach out (via email or office hours) if you feel that this is a barrier to your success in the course. For probability and statistics calculus is an important tool, but it is not my intention to re-test that material.

Office Hours: By online appointment. There is a booking link provided on the course website, alongside the full booking policy. If there is a need outside of the allotted times, please email me, and times outside of available slots can be arranged. If booking online, there is a capacity to select a Teams office hour, or in person; either can be arranged.
Additionally, if I am in my office with my door open, you may feel free to knock to discuss questions. Availability outside of the specified times may be sparse, but I am always happy to have a chat when I am available.

Communication and Discussion Forum: I will endeavour to, during the weekdays and business hours, respond to emails as promptly as possible. This should typically be withing 24 hours. Outside of business hours, response times will vary.

In addition to the course website, I propose that we use Teams as an additional discussion form. You should be automatically enrolled in a Teams room and this is linked on the course website. I am open to other options and would prefer to hear from you as to what has worked best in the past (for instance, we could consider Discord or Slack, instead). I would encourage that questions regarding course material, if you are comfortable doing so, are posted to the discussion forum instead of over email.

Main References: There is no required textbook for the course. All of the required content in the course will be covered in the lecture videos and in supplemental notes (as are required) posted to the course website. These are a selection of potentially useful textbooks for learning the material. Other books are likely acceptable and encouraged if they help you approach the material!

- Probability and Statistics for Engineering and the Sciences - Jay Devore.

- Statistics for Engineers and Scientists - William Navidi.

Objectives: This course is best viewed as a high level overview of topics in probability and statistics which will give you a set of tools to address uncertainty in your life and work. There are a wide array of topics covered, with a focus on breadth in this course. Correspondingly, we will move quickly through topics, and each builds on the last. I recognize that each of you is entering this class with different goals, expectations, and desires, and it is my intention to help you achieve those outcomes, while exposing you to these statistical concepts. You are encouraged (early in the term) to provide some guidance as to your goals, plans, and interests. This will help me shape your experience in this course in service of those outcomes. In exchange, I hope that you take the time to approach the course material with interest and critically engage with the ideas presented.

The following provides a tentative breakdown of the topics to be covered, time permitting, throughout the duration of the course. Section numbers correspond to the reference in the main course text.

1.1 Populations, Samples, and Processes	5.3 Statistics and Their Distributions
1.2 Pictorial and Tabular Methods in Descriptive Statistics	5.4 The Distribution of the Sample Mean
1.3 Measures of Location	6.1 Some General Concepts of Point Estimation
1.4 Measures of Variability	6.2 Methods of Point Estimation
2.1 Sample Spaces and Events	7.1 Basic Properties of Confidence Intervals
2.2 Axioms, Interpretations, and Properties of Probability	7.2 Large-Sample Confidence Intervals for a Population Mean and Proportion
2.3 Counting Techniques	7.3 Intervals Based on a Normal Population Distribution
2.4 Conditional Probability	7.4 Confidence Intervals for the Variance and Standard Deviation of a Normal Population

2.5 Independence	8.1 Hypotheses and Test Procedures
3.1 Random Variables	8.2 z Tests for Hypotheses about a Population Mean
3.2 Probability Distributions for Discrete Random Variables	8.3 The One-Sample t Test
3.3 Expected Values	8.4 Tests Concerning a Population Proportion
3.4 The Binomial Probability Distribution	8.5 Further Aspects of Hypothesis Testing
3.5 Hypergeometric and Negative Binomial Distributions	9.1 z Tests and Confidence Intervals for a Difference Between Two Population Means
3.6 The Poisson Probability Distribution	9.2 The Two-Sample t Test and Confidence Interval
4.1 Probability Density Functions	9.3 Analysis of Paired Data
4.2 Cumulative Distribution Functions and Expected Values	9.4 Inferences Concerning a Difference Between Population Proportions
4.3 The Normal Distribution	12.1 The Simple Linear Regression Model
4.4 The Exponential and Gamma Distributions	12.2 Estimating Model Parameters
4.6 Probability Plots	12.3 Inferences about the Slope Parameter, β_1

Tentative Course Schedule The following presents a course schedule, as it will be intended to be followed throughout the term.

Week	Dates	Course Deadlines	Tentative Suggested Video Material (Subject to Change)
1*	Sep. 4 – Sep. 8	**September 4: Labour Day – No Classes**	001
2	Sep. 11 – Sep. 15		002; 003; 004
3	Sep. 18 – Sep. 22		005; 006; 007
4	Sep. 25 – Sep. 29		008; 009–010; 011
5	Oct. 2 – Oct. 6	**October 2: National Day for Truth and Reconciliation – No Classes**	012; 013–014; 015–016
6	Oct. 9 – Oct. 13	**October 9: Thanksgiving Holiday – No Classes;** ~~October 11: Problem Set #1 Due~~	017; 018

7	Oct. 16 – Oct. 20	**Week of:** ~~Midterm Exam – Date/Time to be Decided~~**October 16:** Problem Set #1 Due; **October 18:** Midterm Test	019; 020
8	Oct. 23 – Oct. 27		021–022; 023; 024
9	Oct. 30 – Nov. 3	**October 30: Last day to withdraw without grade penalty.**; ~~**November 1:** Problem Set #1 (Resubmit)~~[‡]	025; 026–028; 029
–	Nov. 6 – Nov. 10	**Reading Break:** There is no course content to be covered during your reading break. Please take the time for yourself!	
10	Nov. 13 – Nov. 17		030–032; 033; 034
11	Nov. 20 – Nov. 24	**November 20:** Problem Set #1 (Resubmit)[†]; **November 22:** Problem Set #2 Due	035–036; 037; 038
12	Nov. 27 – Dec. 1		039; 040
13*	Dec. 4 – Dec. 8 (No Friday Class)	**December 6:** Problem Set #2 (Resubmit)[†]	None

Course Schedule: This course will be run as a *partially flipped classroom*. In a flipped classroom, the goal is to have encountered the course material prior to coming to class, which frees course time (time with your instructor) to dive deeper into the material, clarify misunderstandings, demonstrate problem solving, and finding new ways of presenting the material to ensure a deep understanding. In this course we will leverage a *partially* flipped model, where the degree of outside study is directed by you.

- Linked on the course website there are lecture videos covering each of the topics presented in the course. **These lecture videos cover all of the material expected of you throughout the term.** The videos are largely conceptual, with minimal space devoted to fully worked examples. **Each week, suggested video content will be indicated, based on the progression throughout the term.**

- Alongside the videos is a large set of example problems which test understanding. These problems have an indication of the relevant material to address them, and are intended to be worked alongside the lecture videos. It is never *required* to solve these problem sets, however, doing so will prepare you for success throughout the course assessments. **Solutions (or, sometimes answers) will be posted with a delay for the problem sets throughout the term. It is strongly advised that you try the problems without the solutions.**

- Before any given class, the material that is related to that day's class will be indicated (both in terms of which videos are pertinent, and in terms of what problems are relevant). **Ideally, you would work through the videos and read (or attempt) the problems prior to the given class period.** Questions, clarifications, or comments on the material should be recorded (or posted on the course website). **Important:** you are not expected to fully grasp all of the material on your own – the idea is to enter class times with a conceptual understanding, which we can work together to improve.

- Twenty-four hours prior to **each class**, a short survey will be due on the course website. The survey will simply ask:

1. Did you watch the relevant lecture videos? [Yes/No]

2. If yes, are there any concepts which are unclear, questions about the material, or points you would like explained deeper? [Optional freeform text response]

3. Did you read (or try) any of the relevant practice problems? [Yes/No]

4. If yes, are there any problems that you would like to see solved during class time? [Optional freeform text response].

5. Do you have any further comments? [Optional freeform text response]

- I will use the results of these surveys to plan the following day's in class activities. If a majority of the class has watched the lectures, I will focus on providing clarity to the points of confusion, working on problems, answering the questions, etc. If few people have worked through the lectures ahead of time, I will provide the lecture in person, with a particular focus on clarifying points for those who have.

- For the class periods where a lecture is provided, this will be the **same material** as is provided on the video. The lecture in person will be supplemented with practice problems, examples, and answers to questions, but will not be fundamentally different. For the class periods where the lecture has been watched ahead of time, the material will be *specifically catered* to the requests of the class, and will naturally develop as we work through it together.

The structure of the class has been designed with several goals in mind. Primarily, the goal is to simultaneously make the most effective use of our in class time (in order to ensure the best understanding possible) and to give you all **autonomy** and **flexibility** over how the course will run. It is ultimately up to you whether the course functions as a standard lecture-based course, or if we take a more modern approach. It is my goal to give you the best learning environment, based on your needs, and your current scenarios, rather than expecting you to conform to specific notions of the "correct" way to do a course.

If, at any point throughout the term, you have feedback on how the course is running, what is (or is not) working, or other comments you would like to share, please do. If there is any way to make this course an effective and enjoyable use of your time, I would like to find it!

Assessment Breakdown: Grades in the course will be determined based on:

	Weight	Notes
Problem Sets	24% (12% each)	Each assignment will have a resubmissions date, as outlined below.
Flipped Classroom Survey Responses	6%	As described above; must complete 90% of them for full marks.
Midterm Test	~~10%~~ 0%	Format and date to be voted on. Written on Wednesday, October 18, in class in person. Option for both a D2L or paper copy (same exam).
Final Exam	35%	During final exam period. It will be cumulative.
Better of Midterm and Final	~~+25%~~ +35%	The remaining weight will be assigned to the higher of your midterm or final.

Assignments: The purpose of assignments is to give you practice with the course concepts, and to provide

a self-assessment for the concepts which are understood and those which are not. Assignments are to be submitted through Crowdmark, and you will receive a personal link via email well before the due date.

- **Assignment Grading:** Each assignment has two corresponding deadlines, a submission date and a later re-submission date. After the submission date, your assignment will be graded, and high-level feedback will be given, in advance of the re-submission date. Following this, you will have the opportunity to (if desired), using the feedback, re-submit your assignment with corrections made, and a brief written summary explaining the initial error (i.e., what was the misunderstanding). I will then mark the re-submitted papers, allowing for (up to) 50% of the lost marks to be returned. For problem set #1, you can earn back (up to) 100% of the lost marks. At this point, solutions to the assignment questions will be released on D2L. Note, if you do not re-submit your assignment, the grade originally presented will serve as the grade on the assignment. Full details will be provided alongside the first assignment.

- **Late or Missed Assignments:** If you do not submit before the submission date, without a prior extension, you will still be able to submit your work by the re-submission date (allowing you to earn up to 50% on the assessment). If you do not submit by the re-submission date, your work will not be accepted, and you will receive a 0% on the corresponding assignment.

- **Rules for Group Work:** Learning statistics is more effectively done with peers to assist and challenge your understanding. You are encouraged to discuss problem sets with your classmates, but each student must submit their own unique work (solutions, results, etc.). Further, any students who discuss solutions with their peers should indicate this on their submission, to avoid being flagged for academic integrity violations.

- **Retrieving Marked Assignments:** A link to your graded submission (and re-submission, if applicable) will be sent to you via email.

Survey Responses: The survey responses will be the primary mechanism through which you guide the course throughout the term. They are critical to ensure effective learning. As a motivation for completion, you will be awarded 6% of your grade simply for completion. **Note:** it *does not* matter whether you respond that you have seen the videos, or not, for grades here. Please answer honestly and take full advantage of the continual feedback on course time! **This component of your grade will be pass/fail.** If you complete at least 90% of the surveys (which likely requires completing 27 − 30 of the 30 − 33 surveys [exact number to be determined])If you complete 25 of the 30 (83%) surveys, then you will receive the 6% of your grade. Otherwise, you will receive a 0% on this course component).

Midterm Test: The term test (tentatively the week of October 16) will have its structure voted on by you in the first week of classes. This will either be:

- Three short (approximately 20 minute), online quizzes, with allowable access to course materials, one on each of the three days through the week, each with equal weight.

- An in-class paper-based examination, to be completed on a single day within 50 minutes, without external materials.

This was decided on, as a class, to be a compromise between the two. This was a single, in class exam, that could be written on either D2L or on paper. It was open book/material. In addition, a bonus question for 3 points was made available, on D2L, conducted at home. Your midterm grade is the summation between the midterm grade itself (/20) and the bonus (/3) allowing for a possible 115%. In either case, you will be expected to complete the material by yourself (without input from your peers). The intention will be to create an assessment which can be completed in less than the allotted time, so as to ensure that time pressure is not the defining metric for success. Details regarding the precise coverage will be provided

during the term, based on the progression through the material. **The midterm exam will not have a re-submission date.**

Final Exam: A cumulative final examination will be held during the standard exam period. We will discuss the details (with the possibility for your input) early in the term!

Tentative Assessment Schedule (Subject to Change, only to your benefit)

	Submission Deadline	Re-Submission Deadline
Problem Set #1	~~Wednesday, October 11th~~ Monday, October 16 (delayed due to a University Closure on Monday, October 2	~~Wednesday, November 1st~~ Monday November, 20
Problem Set #2	Wednesday, November 22nd	Wednesday, December 6th
Term Test	Week of October 16th	Not Applicable
Final Exam	Exam Period	Not Applicable
Survey Responses	Most* Sundays, Tuesdays, and Thursdays by 11:30AM during the term.	Not Applicable

Assignments will be due *before* class on Wednesdays, both for the original submission and the resubmissions.

Tentative Assessment Coverage: The following coverage is tentatively going to be attached to each of the following assessments. This is subject to change, depending on the speed with which we work through material.

	Topics Covered
Problem Set #1	~~Lessons 001 – 015; Up to and including: "3.6 The Poisson Probability Distribution"~~ Lessons 001 – 014; Up to an including: "3.5 Hypergeometric and Negative Binomial Distributions".
Problem Set #2	~~Lessons 016 – 033; Up to and including: "8.5 Further Aspects of Hypothesis Testing"~~ Lessons 0015 – 025; Up to and including "7.1 Basic Properties of Confidence Intervals"
Term Test	~~Lessons 001 – 018; Up to and including: "4.3 The Normal Distribution"~~ Lessons 001 – 015; Up to an including: "The Poisson Probability Distribution"
Final Exam	Lessons 001 – ~~040~~ TBD (end of course material); Cumulative Assessment

Course Policies:

- **Attendance:** The lecture material is offered online, asynchronously, in an attempt to best accommodate everyone's needs. The class periods will be used to reinforce the material, emphasize what

is important, demonstrate problem solving, and so forth. I hope that your desire to attend will be rooted in their utility. With that said, there is no attendance grade for the course and students are responsible for any content that may be missed.

- **Requests for Re-grading:** If, after reviewing the posted solutions and/or feedback, you feel your assignment/test/project has an incorrect grade, you are entitled to request a re-grade. Please email me your request, with a brief explanation specifying which question/component is to be re-graded, and your rationale for the re-grade request. Requests should be made within seven days of the day that the assessment was returned (or seven days following the solutions, if those are delayed).

- **Accommodations for Extenuating Circumstances:** If you require an accommodation for a date or deadline due to extenuating circumstances (e.g., illness) please reach out to me as early as possible and we will discuss what options are available.

A Note on Grades: Grading is intended to be a mechanism for communicating your understanding of the material, both to you (throughout the term) and to others (after the term). It is not my intention to use grades as the primary means of motivating your progression through the course. I have designed the assessments to test your conceptual understanding, and have tried to ensure that your time is respected throughout the entire course offering. I encourage you to reach out to me if you have specific goals which we may be able to achieve through the use of the assessed materials in the course, allowing for them to serve as more than a vehicle towards a numeric grade. At the same time, I recognize that grades can be a source of anxiety for students. I have attempted to create a grading scheme which is fair and throughout the term I will communicate exact standards for work. I encourage you to reach out and discuss with me if there are any ways we can ensure that stress over grades does not prohibit learning in this course.

Grades given as a percentage will be converted to letter grades according to:

A+	92 – 100	B+	75 – 79	C+	58 – 64
A	86 – 91	B	70 – 74	C	50 – 57
A-	80 – 85	B-	56 – 69	D	45 – 49
				F	0 – 44

Statements on Generative AI: Students may use generative AI in this course for conceptual understanding or problem guidance. The use of generative AI **must be** referenced and cited as any external source would be. Using generative AI outside assessment guidelines or without citation will constitute academic dishonesty. It is the student's responsibility to be clear on the expectations for citation and reference and to do so appropriately.

University Policies and Helpful Material

This material is taken directly from the university, summarized here for your benefit.

- **General Technical Support:** For general technical support, please contact Information Technology Services (ITS) Help Desk by phone, 457-2222 (Fredericton Campus) 657-2222 (Saint John Campus) or email, itservicedesk@unb.ca.

- **Getting Organized for your Academic Success:**

  - **Your Academic Work is a Full-Time Job:** Treat your studies at UNB as a full-time job, if you are enrolled full-time. Every lecture hour of a course takes on average 3 hours of work outside of that, preparing, reviewing, studying, and working on assignments. Set aside about 40 hours of time per week for your academic work, and use this rule-of-thumb as a guide to setting expectations for the others with whom you share your living space, which will most likely also be your learning and study space. If you have a job while studying at UNB, try to keep it to no more than 15 hours per week.

  - **Manage Your Time:** Since your academic work is your full-time job, likely to take 40 hours per week, you need to set an academic work schedule on a weekly basis. To get set up to do this, look at the key academic dates for the entire term and note the important ones:
    https://www.unb.ca/secretariat/students/undergraduatedatesmain.html
    For example, note the last day for adding courses, the last day for withdrawing from courses without academic penalty and reading week for the fall term.

  - **Start with the big picture:** Create a Term-at-a-Glance table or matrix so you can visualize how the academic dates unfold over the 15-week period (13 for classes, 2 for exams).

  - **Then create schedules week-by-week:** Before you start your first week of classes, and then at the end of each week, create a weekly schedule in a tabular form. Start by referring to your Term-at-a-Glance, then checking the syllabus and communications from professors about upcoming course work.
    Include class preparation and study time, as well as your other life commitments, such as work or household chores. And, schedule "health and wellness" time to take care of yourself, such as exercise, favourite pastimes, hanging out with friends and other social activities.

  - **Make a plan each day:** Use an electronic or paper day planner or agenda, or whatever other tool you're used to or want to try, to create a list of tasks with times associated with them for each day. Start with your weekly schedule. These items are your goals for the day to keep you on track and motivated.

- **Library Information:** www.lib.unb.ca
  UNB Libraries supports your learning and academic success. Librarians will help you navigate academic resources and guide you through your research and information needs. Examples of this support include finding reliable sources for your assignments, searching scholarly databases, and offering advice on the quality of your research. A vast collection of resources is available to you online and in print at lib.unb.ca. Research help is available by phone, e-mail, chat, and in-person.
  UNB Saint John's library is located in the Hans W. Klohn Commons. The Harriet Irving Library (HIL) is the main library on UNB's Fredericton campus and is located directly across from the Student Union Building (SUB).
  The libraries offer quiet and group study space. Book a Group Study Room online at
  http://www.lib.unb.ca/services/group_study.php
  Alex Goudreau is the librarian for all Sciences, Engineering, Nursing, and Health. Alex is available to meet one-on-one, online or in person. Contact information and research guides by subject:
  https://guides.lib.unb.ca/profile/u83a9

- **Equity, Diversity, and Inclusion:** UNB embraces the idea of an intellectual community enriched by diversity along a number of dimensions, including gender, gender identity, sexual orientation, age,

culture, ability, race, ethnicity, language, religion, and nationality. It is my intent that all students be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity students bring to this class be viewed as a resource, strength and benefit. I intend to provide materials and activities that are respectful of diversity. Your suggestions are encouraged and appreciated. In addition, if any of our class meetings conflict with your religious holidays, please let me know so that we can make arrangements for you.

Location of gender-neutral washrooms on campus (scroll down):
https://www.unb.ca/humanrights/resources/index.html
Office of Human Rights and Positive Environment:
https://www.unb.ca/humanrights/index.html

- **Services for Students with Disabilities:** Academic accommodations for students with disabilities are provided by the Student Accessibility Centre. If you are a student with a disability and would like to discuss potential accommodations, you are encouraged to contact Ken Craft, Student Accessibility Centre Coordinator. Ken can be reached at kcraft@unb.ca or 648-5690.

- **Your wellbeing is important.** It is normal for university students to experience mental and physical health challenges. If you or a friend encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with a mentor or academic advisor. Learn about resources that assist with wellness and academic success at the University of New Brunswick by visiting: www.unb.ca/saintjohn/studentservices/. **If you are in immediate crisis, please contact CHIMO helpline at 1-800-667-5005.**

- **Class Recording and Copyright:** Anyone who wishes to video or audio record lecture presentations or distribute course notes or other similar materials provided by instructors must obtain the instructor's written consent beforehand. Otherwise, all such reproduction is an infringement of copyright and is absolutely prohibited and subject to academic penalties (see Academic Offences below). Classes may be recorded by students with documented disabilities for personal and private use.

- **Plagiarism and Academic Offenses:** "The purpose of education is to acquire knowledge, develop skills, and to grow as an individual. In order to achieve these goals one needs to approach one's courses in an honest manner. This requires individuals to submit work that is their own creation. Students often wonder why documenting their sources and maintaining a high level of academic integrity is so important, and why failure to do so is taken so seriously. Work undertaken at university is part of a centuries-long conversation. All work builds on that of your predecessors. Documenting your sources recognizes the efforts of others and places your contribution within the conversation. Therefore, your documentation/integrity shows courtesy for your sources and for your reader." – Ken Craft
  The university has carefully defined what it considers plagiarism, and these regulations are found in the UNB calendar section B.19 IX Academic Offences:
  Plagiarism includes

  1. quoting verbatim or almost verbatim from any source, regardless of format, without acknowledgement;
  2. adopting someone else's line of thought, argument, arrangement, or supporting evidence (such as, statistics, bibliographies, etc.) without indicating such dependence;
  3. submitting someone else's work, in whatever form (essay, film, workbook, artwork, computer materials, etc.) without acknowledgement;
  4. knowingly representing as one's own work any idea of another.

  NOTE: In courses which include group work, a penalty may be imposed on all members of the group unless an act of plagiarism is identified clearly with an individual student or students.
  Please note that plagiarism is not difficult to spot; web sources can be quickly traced through a variety of specialty search engines. Professors are required to follow the disciplinary procedures outlined in the calendar (B.17. IX. A. 1-2).

- **OTHER ACADEMIC OFFENCES** you need to be aware of include:

  1. Cheating on examinations, tests, assignments or reports, including but not limited to: Impersonating a candidate at an examination or test or in connection with any assignment in a course or availing oneself of the results of impersonation. Obtaining, through theft, bribery, collusion, purchase, or other improper manner,

  2. an examination or test paper prior to the date and time for writing the examination or test;

  3. academic materials belonging to another person, e.g., laboratory reports, assignments, papers, computer materials, datasets.

  4. Falsifying or knowingly submitting false assignments or credentials, records, transcripts, or other academic documents.

  5. Submitting a false health or other certificate.

  6. Submitting identical or substantially similar work for one course or program of study, which has been or is being submitted for another course or program of study, without the prior express knowledge and approval of the instructors.

  7. Interfering with the right of other students to pursue their studies.

  8. Knowingly aiding or abetting any of the above offences.

  9. Tampering with, or altering, in any deceptive way, work subsequently presented for a review of the grade awarded.

  Penalties for plagiarism and other academic offences range from a minimum of F (zero) in the assignment, exam or test to a maximum of suspension or expulsion from the University, plus a notation of the academic offence on the student's transcript.
  For more information, please see the Undergraduate Calendar, University Wide Academic Regulations, Regulation VIII.A, or visit: http://go.unb.ca/tlsPb0XX5 . It is the student's responsibility to know the regulations.

- **Math and Science Help Center:** The Flora Beckett Math & Science Help Centre offers free statistics help (among other subjects). Please visit:
  http://www.unb.ca/saintjohn/sase/advising/current/mathhelpcentre/index.html