



COURSE DESCRIPTION

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The purpose of this course is to improve your numeracy and critical thinking skills to help you make better decisions in both your personal and professional life. To achieve this, you will learn about probability, how to make sense of raw data, how best to describe data to others, and how to solve problems and test predictions using statistics.

This course follows a 'blended model', meaning that course material is provided using weekly online lessons, a face-to-face lecture each week that goes into greater depth using case studies, and a face-to-face weekly tutorial where you learn to work with and analyze data. Drop in help sessions are available every week where students can come without appointment for assistance with any of the course material.

STUDY HABITS FOR SUCCESS

Active learning requires a different set of study habits than passive learning—here are some study habits to help you succeed.

- **Preparation is key** Make sure to devote enough time to master the pre-module material before the labs. Cramming at the last minute may work for passive learning, but it does not give you enough time to build the connections across the

COMMUNICATION

material that you need for active learning.

- **Seek help early** The online material contains lessons, quizzes, and additional resources to get you ready for each module. Give yourself the time to work through the main material, and any of the additional resources when you find concepts more challenging. If you need additional help, or just want an opportunity to talk about the biology, make sure to come to the office hours that instructors run each week.
- **Reading is not enough** The central part of active learning is that you are at the centre of your learning. Reading the online material gives you a foundation, but you need to develop the connections that come from applying the material. Some good strategies are to write a brief set of paragraphs to summarize the material, work in study groups to discuss the ideas, go through the quiz questions with a study partner, and come to office hours.

UNIVERSITY OPERATING DATES

Sep 1	Tuition due
Sep 5	Classes start
Sep 18	Last day to add courses
Sep 18	Last day to drop courses without financial penalty

Nov 1	Last day to drop without academic penalty
Nov 7	Last day to change exam centre Last day to submit exam accommodation requests (if applicable)
Nov 29	Classes end
Dec 4-19	Exam Period

LEARNING OUTCOMES

After completing this course, students should have the knowledge and skills to do the following:

1. Identify the features of a data set to determine how best to summarize and display it.
2. Choose the appropriate statistical test and provide the rationale for selection.
3. Compute basic parametric statistical tests to test hypotheses.
4. Interpret the results of statistical tests and data software output to be able to draw valid conclusions.
5. Apply knowledge of statistics and research design (e.g., sampling) to critically evaluate research findings.

COURSE MATERIALS

TopHat Software

At your earliest convenience, please register with the interactive teaching platform TopHat, which we will be using during lecture.

- Website: <https://tophat.com/>
- Cost: \$26/4 months
- University name: Queens University
- Course name: **Introduction to Statistics-Multidisciplinary F2018**
- Or use the join code: **937951**
- Make sure to register using your Queen's net ID and student number!

There is no required textbook for this course. All course material will be available in onQ.

Third Party Policy

This course makes use of TopHat for some activities. Be aware that by logging into the site, you will be leaving onQ, and accessing Tophatmonocle Corp's website and Top Hat. Your independent use of that site, beyond what is required for the course (for example, purchasing the company's products), is subject to THM's terms of use and privacy policy. You are encouraged to review these documents, using the link(s) below, before using the site.

<https://tophat.com/legal/privacy/>

SUGGESTED TIME COMMITMENT

Students can expect to spend approximately **9** hours a week in study/practice and online activity for this course.

- Online Lesson: 2-4.5 hours (as needed)
- Lecture: 1 hour
- Tutorials: 1.5 hours
- Software Guides: 1 hour
- Additional Practice: as needed
- Drop-in Sessions: 0-2 hours

WEIGHTING OF ASSESSMENTS

Assessment	Location	Weight	Learning Outcomes	Content Elements
In-Lecture Participation via TopHat	Lecture	5%	1-5	Video Lessons, Lecture
Software Skills Quizzes (x3)	Online	9%	1-5	Software Guides
Weekly Online	Online	11%	1-4	Video

Quizzes				Lessons, Software Guides
Tutorial Activities	Tutorial	15%	1-5	Incorporates all content
Inquiry-Based Project	Tutorial, Independent	10%	1-5	Incorporates all content
Term Tests (x2)	Lecture	20%	1-4	Video Lessons, Lecture, Practice Problems
Proctored Final Exam	TBD	30%	1-5	Video Lessons, Lecture, Practice Problems

Location and Timing of Final Examinations

As noted in Academic Regulation 8.2.1, “the final examination in any class offered in a term or session (including Summer Term) must be written on the campus on which it was taken, at the end of the appropriate term or session at the time scheduled by the Examinations Office.” The exam period is listed in the key dates prior to the start of the academic year in the Faculty of Arts and Science Academic Calendar and on the Office of the

University Registrar's webpage. A detailed exam schedule for the Fall Term is posted before the Thanksgiving holiday; for the Winter Term it is posted the Friday before Reading Week, and for the Summer Term the window of dates is noted on the Arts and Science Online syllabus prior to the start of the course. Students should delay finalizing any travel plans until after the examination schedule has been posted. Exams will not be moved or deferred to accommodate employment, travel /holiday plans or flight reservations.

Arts and Science Calculator Policy

Calculators acceptable for use during quizzes, tests and examinations are intended to support the basic calculating functions required by most Arts and Science courses. For this purpose, the use of the **Casio 991** series calculator is permitted and is the **only approved calculator for Arts and Science students**. This inexpensive calculator sells for around \$25 at the Queen's Campus Bookstore, Staples and other popular suppliers of school and office supplies.

ASSESSMENTS AND ACTIVITIES DESCRIPTION

Participation During Lectures

To facilitate interaction among students and professor during the weekly case-study lectures, we will use the online interactive teaching platform tophat (www.tophat.com). This will allow you to respond to questions and discussion points in lecture. Participation marks are awarded for both responding to tophat questions and for providing the correct answer to selected 'challenge' questions.

We recognize that there can be technical issues using TopHat in a lecture hall, or that you might miss a lecture due to illness or academic accommodation. To accommodate these issues, we will drop your lowest 25% of your TopHat scores.

As an example: let's say by the end of the course there are 40 marks worth of TopHat questions that have been asked, and you've scored 25. However, you're concerned because you were sick for one lecture and your laptop had trouble connecting to TopHat during another. To provide everyone with leeway for these missed TopHat opportunities, we will mark your score out of 30, not 40. So your mark would be $25/30 = 0.833$. This then gets multiplied by 5 (the total marks allocated to TopHat questions) to yield 4.16 marks.

Software Skills Quizzes (Weeks 2, 5, 9)

Software Skills quizzes will be at the end of Weeks 2,6,9. These are timed quizzes that are designed to evaluate your skills in Microsoft Excel and R based on what you've been taught in the preceding tutorials. The quizzes start at a fixed time (see Time

Line for dates and times) and are done online. It is the responsibility of the student to ensure that they are using a reliable computer and internet connection, and are working in a physical space that is amenable for the quiz.

- Quiz 1 (week 2) covers content from Software Guide weeks 1-2
- Quiz 2 (week 5) covers content from Software Guide weeks 1-4
- Quiz 3 (week 9) covers content from Software Guide weeks 1-8

Module Quizzes

There are 11 quizzes, each open for a week. The quizzes will consist of multiple-choice questions based on the weekly material from module videos, self-assessment and software guide (when applicable). The quiz will open midweek of each week and will be due early the following week (see Time Line for dates and times). You can take the quiz as many times as you like. Your highest mark will be recorded as your mark for the quiz.

Tutorial Activities

Tutorial Activities are performance-based activities designed to reinforce concepts from all aspects of the course. These activities are intended to help you see the utility of statistics in your respective discipline. An outline of each activity will be posted to onQ by the Monday before your tutorial. You

must attend the same tutorial time each week. During the first 2 weeks of term, you can change your tutorial time on SOLUS if necessary. But after the 1st 2 weeks of class, you can no longer switch tutorial times for any reason. **You must be physically present in tutorial to receive a grade for the tutorial activity.**

Religious observances that conflict with your tutorial time must be declared by the end of January to In2Stats@queensu.ca

Inquiry-based Project

This project is designed to give you the opportunity to collect and analyze your own data on a topic that's of interest to you. The Teaching Assistants will give you detailed information about the project over the term, and you will have some tutorial time dedicated to working on the project.

Term Tests

The two term tests (2 x10%) will be written in Week 6 and week 10 (see the Timeline for exact dates). The first term test covers material Modules 1-5 and term test 2 covers materials from Modules 1-9 with emphasis on Modules 6-9. Term tests will be multiple choice and short answer. Each term test will include material from the modules videos, lectures, module practice problems and elements of the tutorials.

Proctored Final Exam

The Final Exam is three hours in length and includes multiple-choice and short answer questions based on the material from the entire Fall term, including all modules videos, lectures, module practice problems and elements of the tutorials. Exam dates: The specific dates for each exam will be announced later in the term by the Registrar's office. Once the exam schedule has been finalized the exam date will be posted on your SOLUS account.

Please note that the Senate Policy on Academic Consideration for Students in Extenuating Circumstances is applicable during the final examination period. In the Faculty of Arts and Science, students who are too ill to write the examination or are experiencing extenuating circumstances are being directed to the Academic Consideration Request Portal (ACRP) to submit a request for consideration.

Assessment Accommodations

Queen's University supports Universal Instructional Design to create more accessible learning environments. In addition to incorporating a variety of delivery methods and learning materials, this course has several academic accommodations built directly into the assessments. For most students, the assessment design incorporates extra time on assignments/tests and computer assisted examinations.

If you have a formal academic accommodation that goes beyond the accommodations described below, please follow the instructions on our Academic Accommodation & Consideration page to send us your letter.

Weekly Quizzes are done online, in a location of your choosing, and are open for 5 days. The quiz takes from 30-50min to complete depending on the week. The 5-day window provides for any time accommodations as well as enough time to attend the help sessions.

Tutorial Activities are done and submitted during tutorial time and typically involve working in groups of 3-4 people. Since the activity is group work, students will need to work together during scheduled time. It is not possible to have individual accommodations in group activities; however we open up the tutorial activity ahead of time so that you can prepare before coming to tutorial.

Software Skills Quizzes are done at a scheduled time but in a location of your choosing. These are timed quizzes and if you require extra time for an accommodation, we will gladly add that to your individual quiz.

Term Tests and Final Exam are done during scheduled time. We provide extra time (up to 30min per hour) in the design of the assessment. For example, most students take about 80min to complete the term test, but we schedule 2hrs. If

your accommodation is more than 30min per hour, or you require a particular room size, then we will gladly make those accommodations for you.

GRADING

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56

D-	50-52
F	49 and below

CONTACTING THE TEACHING TEAM

The teaching team contact information is located on the Homepage of the course (see “Teaching Team”).

For any questions about the course, from course material in the videos and study strategies to getting help with tutorial activities and exam prep, please come to the Drop-In Help Sessions. Each session is facilitated by one of your professors.

Please use the course email for inquiries that are about the logistics of the course, such as where to find due dates, or where your exam is written. A Teaching Assistant will respond typically within 24hrs. Note, if you have questions about course material you should bring those to the help sessions.

Course email: In2Stats@queensu.ca

If you have academic accommodations, please submit your form to the ‘Accommodations’ dropbox on the home page. We will send you any information about the accommodation (such as alternative exam rooms) through the dropbox.

If you have missed an activity in the course (e.g., exam, quiz), please read the course policies and then submit the appropriate form through the ‘Missed Activities’ dropbox.

COURSE FEEDBACK

At various points during the course, students may be asked to take part in a variety of feedback activities (such as questionnaires and exit tickets).

This feedback enables the team to make any adjustments necessary to improve the online learning environment. Additional student feedback will be sought throughout the course. All surveys are anonymous, and directly related to activities, assessments, and other course material.

NETIQUETTE

In any course you often communicate with your peers and teaching team through electronic communication. You are expected to use the utmost respect in your dealings with your colleagues or when participating in activities, discussions and online communication.

Here is a list of netiquette guidelines. Please read them carefully and use them to guide your communication in this course and beyond.

1. Make a personal commitment to learn about, understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on the lives of other people and make sure your writing

is respectful and inclusive.

4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers write before you respond. Think through and re-read your writings before you post or send them to others.
6. It's ok to disagree with ideas, but do not make personal attacks.
7. Be open to be challenged or confronted on your ideas and challenge others with the intent of facilitating growth. Do not demean or embarrass others.
8. Encourage others to develop and share their ideas.

QUEEN'S EMAIL

The university communicates with students via Queen's email. Please check your email regularly to ensure you do not miss important information related to your course.

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registered student's personal use, but shall not be distributed or disseminated to anyone other than students registered in BIOL 243/KNPE 251/NURS 323/PSYC 202. Failure to abide by these conditions is a breach of copyright, and may also constitute a breach of academic integrity under the University Senate's Academic Integrity Policy Statement.

ACCESSIBILITY/ACCOMMODATIONS

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities.

If you are a student with a disability and think you may require accommodations, you are strongly encouraged to contact the Queen's Student Accessibility Services (QSAS) as early as possible. For more information, including important deadlines, please visit the QSAS website.

Students with course accommodations should contact CDS immediately following registration to inform them of any accommodations to their timed assessments and/or final exam(s).

ACADEMIC CONSIDERATIONS FOR STUDENTS IN EXTENUATING CIRCUMSTANCES

The Senate Policy on Academic Consideration for Students in Extenuating Circumstances was approved in April, 2017. Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances that are beyond their control and which have a direct and substantial impact on their ability to meet essential academic requirements. The Faculty of Arts and Science has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances, which can be found at: <http://www.queensu.ca/artsci/accommodations>

ACADEMIC INTEGRITY

Academic integrity is constituted by the six core fundamental values of honesty, trust, fairness, respect, responsibility, and courage.

These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive.

Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University.

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic

integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1), on the Arts and Science website, and from the instructor of this course.

Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

COMPUTER REQUIREMENTS

Microsoft Windows

Client

Vista/Windows

7/Windows 8

Intel Core 2 Duo
processor

4 GB RAM

Soundcard with
speakers and

microphone or

preferably a headset

Webcam

Mac Client

OS X 10.8 or higher

Intel i5 processor

4 GB RAM

Internal, USB or
external iSight

microphone or

preferably a headset

Webcam

Supported Browsers

Chrome (latest version)
 Firefox (latest version)
 Safari (latest version on
 64-bit Intel processors
 only)

Internet Connection

Wired high speed
 access: Cable or better
 (wifi is not
 recommended)

Java

Latest version

Media Player

Flash (latest
 version)

Adobe Reader

Latest Version

STUDENTS STUDYING OR TRAVELLING ABROAD

If you plan to travel, we strongly recommend that you confirm Internet availability in your host country prior to departure. In the past, students in other countries have been blocked from accessing certain websites relevant to their courses, as well as onQ. It is the responsibility of all students to book travel around course work, as we cannot change the format or timing on assessments or assignments as a result of travel plans.