

PSYCHOLOGY DEPARTMENT

Course: AK/AS/SC PSYC 2021 3.0A – Statistical Methods I

Day/Time: Online via Zoom

Course Webpage: This course uses eClass/Moodle and Zoom

Term: Fall Term 2021

Prerequisite / Co-requisite: AK/AS/HH/SC/PSYC 1010 6.00 or AK/HH/PSYC 2410 6.00, GL/PSYC 2510 6.00, with a minimum grade of C when used as a prerequisite. Course credit exclusions: AK/AS/HH/SC/PSYC 2020 6.00, AK/PSYC 2510 3.00 (prior to Summer 2002), SC/BIOL 2060 3.00, SC/BIOL 3090 3.00 (prior to Summer 2000), AS/ECON 2500 3.00, AK/ECON 3470 3.00, AS/HH/SC/KINE 2050 3.00, AK/AS/SC/MATH 2500 3.00, AK/AS/SC/MATH 2560 3.00, AS/POLS 3300 6.00, AS/SOCI 3030 6.00, GL/PSYC 2530 3.00.

Course Instructor & TA's

Instructor: Ed Haltrecht haltrech@yorku.ca

TA: John Kim <johnk84@my.yorku.ca> Students with last name A - K
Khushbu Patel <khushbup@my.yorku.ca> Students with last names L - Z

Time and Location

Audio-visual Lectures available on eClass/MOODLE prior to live sessions on ZOOM
Online active support Wednesday 2:30 pm – 5:30 pm

Please note that this is a course that depends on remote teaching and learning. There will be no activities on campus.

Organization of the Online Course

1. We will hold 11 “lectures” where we present new material. Think about these as “classes”. We will also have a review “class”. All of this will be available in eClass/Moodle.
2. A pre-recorded PowerPoint (audio and visual) lecture will be uploaded to eClass/Moodle about a week before each class. These pre-recordings will be about 40 minutes each- and you can start/stop/pause them at your own speed at any time. You need eClass/Moodle access for this element of the course, on a device that allows you to see and hear the PowerPoint material. But you do not need to have the PowerPoint software program on your device.
3. We will also hold a live Zoom “drop-in” session that is optional and will be recorded for your viewing at any time. The session will be on the date and time allocated for the course (See schedule later in this course outline). The purpose of these Zoom sessions is to quickly review the key elements that were detailed in the eClass/Moodle PowerPoint “lectures” that you had available prior to this Zoom live session. During the Zoom session, your mics will be muted, but you can use the Zoom Chat feature to ask questions. We had to mute your mics because we have about 200 students in the course and it will be chaotic if everyone wants to talk at once.
4. Our TA may hold additional Zoom sessions to help students who are struggling with some of the course material. These additional Zoom sessions will be announced on eClass/Moodle including sending you an email. We may also post additional PowerPoint material if required.

5. This course is divided into 11 main topic areas – which follow closely to the 13 chapters that we will cover in our text. (Some topics include 2 chapters). You should begin the course in Topic 1 and complete it before moving onto the next topic. The topics have been organized in sequential order, so that you build skills and enhance knowledges as you move from one topic to the next. While you have some leeway as to when you complete the topics, a suggested timeline for completing the course has been provided in the schedule later in this course outline. This suggested schedule takes into account the timing of activities and exams.
6. There will be 3 tests worth 30%, 35%, 35%, respectively. The schedule presented later in this course outline lists the timing and content of the tests.

Technical requirements for taking the course:

1. Students will need equipment to gain access to eClass/Moodle.
2. Students will also need access to Zoom for video conferencing during tutorial sessions.
3. In addition to stable, higher-speed Internet connection, students will need a computer with webcam and microphone, and/or a smart device with these features.

A way to determine Internet connection and speed: there are online tests, such as Speedtest, that can be run.

Useful links describing computing information, resources and help for students:

[Student Guide to eClass/Moodle](#)

[Zoom@YorkU Best Practices](#)

[Zoom@YorkU User Reference Guide](#)

[Computing for Students Website](#)

[Student Guide to eLearning at York University](#)

Course Description

Program Learning Outcomes

Upon completion of this course, students should be able to:

1. Compute descriptive statistics and inferential statistics.
2. Interpret and report the results of descriptive statistics and inferential statistics.
3. Distinguish between the role of descriptive statistics and inferential statistics.

Topics Covered

- Defining Key Statistical Terms
- Frequency Distributions
- Central Tendency
- Variability
- z-Scores/Normal Distribution
- Probability
- Sampling Distribution
- Hypothesis Testing
- z-test
- One-sample t test
- Independent Groups t-test
- Repeated Measures t-test
- Confidence Intervals
- Power
- Effect Size
- Correlation
- χ^2 Goodness of Fit
- χ^2 Test of Independence

SCHEDULE AND CONTENT

Sept 8	Introduction to course Broad overview - Descriptive Statistics- mode, median, mean
Sept 15	Broad overview continued - range, variance, standard deviation, (measurement, Summation notation)
Sept 22	(Section numbers refer to text - 10th edition of book) 1.1 Populations and samples 1.3 Variables and measurement 1.4 Statistical notation 2.1 -2.3 Frequency distributions- tables, graphs, shape 2.4 Percentiles, percentile ranks 3.1 – 3.6 Central tendency 4.1 Range 4.2 – 4.6 Standard deviation, variance
Sept 29	5.1- 5.6 z-Scores
Oct 6	6.1- 6.3 Probability
Oct 20	7.1 – 7.4 The distribution of sample means
Oct 27	TEST 1 (3 hours: Worth 30%-covers Chapters 1 - 7) No zoom class
Nov 3	8.1 – 8.6 Hypothesis testing
Nov 10	9.1 – 9.4 t-statistic 10.1 – 10.5 Hypothesis test with two independent samples
Nov 17	11.1 – 11.5 Hypothesis test with related samples Estimation
Nov 24	TEST 2 (3 Hours: Worth 35%-covers Chapters 8 - 11) No zoom class
Dec 1	15.1 – 15.4 Correlation 17.1 – 17.4 Chi-Square statistic
Dec 9	TEST 3 (3 Hours: Worth 35% - covers Chapters 15, 17 and choosing the right statistics for Chapters 8-11, 15, 17) No zoom class

COURSE MATERIALS REQUIRED (Book, MindTap online resource)

Three Course Text Options (PICK ONLY 1 OPTION).

Below are the purchasing options for students. Options are available through the York bookstore. If an option you want is not available on the York site, try the Cengage site.

The text for the course is Gravetter & Wallnau's *Statistics for the Behavioral Sciences* 10th edition. The text publisher also has available an online system called MindTap. It is an aid and contains many problems that you can work on. MindTap is not mandatory for the course. MindTap was designed to work with the same author's text called the Essentials of Statistics. You do not want to buy that Essentials book, but MindTap associated with that book is really good. In a nutshell, your recommended options are to buy a **printed** copy of the 10th edition (available as a text or looseleaf edition) or an **electronic** edition of the 10th edition. You may also want to obtain an electronic version of the online Essentials MindTap resource. You can likely also do well in the course with the 9th edition if you can get it as a used text. The texts only give half of the answers at the back of the book. While the lectures are based on the 10th edition, we will put on eClass the answers for the problems at the end of the chapters for both the 9th and 10th editions.

Option #1 – bundle of: loose-leaf version of the Gravetter 10th ed Stats text + CUSTOM CHAPTER + MindTap Printed Access Card (12 month access)

Package ISBN: 0176882480

Price: \$125.95

Option #2 – bundle of: Statistics for the Behavioral Sciences 10th edition text + CUSTOM CHAPTER + MINDTAP Printed Access Card (12 month access)

Package ISBN: 9780176853020

Price: \$180.95

Option #3 – paperless option - MindTap printed access card (includes e-book) for Gravetter Stats for The Behavioral Sciences, 10th Ed (12 month access). Please ask at the bookstore for this option.

ISBN: 9781337280754

Price: \$99.95

The bookstore is open ONLINE only and will ship texts to students with NO shipping fee. Bookstore web site: <https://www.bookstore.yorku.ca/>

If students already have a used text, all they need is Option #3 – the MindTap access card, which they can purchase through the bookstore web site. The bookstore will email them with an access code.

If students just buy access to MindTap, they may be wondering about the custom

chapter. This chapter contains statistical tests that are used in the second stats course (PSYC 2022) so it's not needed right now. Students can buy this chapter at the bookstore for \$9.95.

MindTap gives students access for three course attempts, which means that a student could withdraw from this course and take it again at a later date and still have access to MindTap. The courses don't have to be consecutive – students could take the course now, withdraw, and then take it again in September 2022.

Course Enrolment

Last date to enrol without permission of course instructor – Sept 21

Last date to enrol with permission of course instructor – Oct 5

Last date to drop courses without receiving a grade – Nov 12

Course Withdrawal Period (withdraw from a course and receive a grade of “W” on transcript – see note below) Nov 13 – Dec 7

**Note: You may withdraw from a course using the registration and enrolment system after the drop deadline until the last day of class for the term associated with the course. When you withdraw from a course, the course remains on your transcript without a grade and is notated as "W". The withdrawal will not affect your grade point average or count towards the credits required for your degree.*

The course instructor and TA's do not get involved in enrolment issues - see department administration.

Evaluation

Three tests worth 30%, 35%, 35% of the final course grade. TOTAL: 100% of the final course grade. See above schedule for dates.

Missed Classes and other matters

We do not take attendance. Please contact your TA for on-line appointments in case you are having any difficulties in understanding the material.

Grading

The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.)

Missed Tests: Students are expected to write each test on the dates specified.

ETHICS AND LEGAL OBLIGATIONS

All students are expected to familiarize themselves with the following information, available

on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage (see Reports, Initiatives, Documents) -

<http://www.yorku.ca/secretariat/senate/committees/ascp/index-ascp.html>

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

Audio-visual recordings – both on eClass/Moodle and Zoom: 1) the recordings should be used for educational purposes only and as a means for enhancing accessibility; 2) students do not have permission to duplicate, copy and/or distribute the recordings outside of the class (these acts can violate not only copyright laws but also FIPPA and intellectual property rights); and 3) all recordings will be destroyed after the end of classes. Please see the Teaching commons going remote website particularly the section on Copyright and intellectual property at <https://bold.info.yorku.ca/> and <https://copyright.info.yorku.ca/students-reuse-of-teaching-materials-from-york-courses-2/> for some statements to use in your course outline about intellectual property.

1) Information about Academic Resources

Textbooks: See notes in this outline and on eClass/Moodle.

Digital content: York University Libraries also has access to online content that can be linked (using permalinks) through eClass/Moodle. A Library guide on creating permalinks/stable links to articles/ebooks/electronic resources can be found in various databases/Omni (the new library catalogue) at <https://researchguides.library.yorku.ca/permalinks> -- that can be used in eClass/Moodle. When students click on the stable link, they will be asked to authenticate through Passport York and then they have full access to the online resource. Using these permalinks addresses copyright issues.

2) Information about Academic honesty and integrity

Please see the library resources, academic integrity, and copyright section of the Going Remote website at <https://bold.info.yorku.ca/>

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course. Breaches of academic integrity range from cheating (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.) to aiding and abetting (helping someone else to cheat). All breaches in this course will be reported to the appropriate university authorities, and can be punishable according to the Senate Policy on Academic Honesty."

Test Banks

The offering for sale of, buying of, and attempting to sell or buy test banks (banks of test questions and/or answers), or any course specific test questions/answers is not permitted in

the Faculty of Health. Any student found to be doing this may be considered to have breached the Senate Policy on Academic Honesty. In particular, buying and attempting to sell banks of test questions and/or answers may be considered as “Cheating in an attempt to gain an improper advantage in an academic evaluation” (article 2.1.1 from the Senate Policy) and/or “encouraging, enabling or causing others” (article 2.1.10 from the Senate Policy) to cheat.

Academic Accommodation for Students with Disabilities

While all individuals are expected to satisfy the requirements of their program of study and to aspire to do so at a level of excellence, the university recognizes that persons with disabilities may require reasonable accommodation to enable them to do so. The university encourages students with disabilities to register with Student Accessibility Services (SAS) to discuss their accommodation needs as early as possible in the term to establish the recommended academic accommodations that will be communicated to Course Directors as necessary. Please let me know as early as possible in the term if you anticipate requiring academic accommodation so that we can discuss how to consider your accommodation needs within the context of this course.

<https://accessibility.students.yorku.ca/>

Electronic Device Policy

This course will be delivered in an online format and therefore electronic devices (e.g., tablets, laptops) as permitted during class time for course-related purposes. It is expected that you would complete tests/exams in a manner that does not require consulting an unauthorised source during an examination.