

PSYC 300B A01 (31264) Statistical Methods in Psychology II Summer 2022

Dates: July 4 – August 19, 2022
Lectures: **Monday/Wednesday** 12:30pm–2:20pm; **Friday** 12:30pm–1:30pm
Location: **Monday/Wednesday** in CLE A127; **Friday** in HSD A240
Labs: **Thursday** 10:30–11:20am (B01); **Thursday** 11:30–12:20pm (B02)
Location: MAC D283

Instructor: Jonathan Rush, PhD (he/him)
Office hours: Wednesday 2:30–3:30pm; By appointment
Office: Cornett B318; Zoom link for office hours
E-mail: jrush@uvic.ca

Lab TA: Elle Parsons (they/them)	TA: Sabrina Francescangeli (she/her)
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Office Hours: By appointment	Office Hours: By appointment

TERRITORY ACKNOWLEDGEMENT

We acknowledge with respect the Lekwungen peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day.

COURSE DESCRIPTION AND OBJECTIVES

This course will provide a conceptual and practical understanding of descriptive and inferential statistics as applied to psychological research. Scientific knowledge in psychology relies greatly on the use of statistics. An understanding of the core statistical concepts will enable you to become a critical consumer of scientific claims. We will provide you with the tools necessary to help you develop the skills needed to evaluate and carry out statistical analyses in psychological research. These skills include:

- Explaining the logic and theory underlying each analysis and implementing the computational procedures
- Applying the appropriate test statistic given a particular research design and data
- Describing the strengths and weaknesses of a given research study
- Correctly interpreting and communicating the results of an analysis

COURSE PREREQUISITES

The prerequisites for PSYC 300B include:

- Completion of PSYC 300A with a minimum grade of 50%

COURSE FORMAT

Lectures: We will meet three times per week for lectures. There will be opportunities during lectures to work on practice problems. It is recommended that you come prepared to do so (i.e., bring your calculator).

Labs: The weekly labs will be an opportunity for you to become familiar with the mechanics of using the statistical software R with the assistance of your very helpful and knowledgeable TA. The guided activities will overlap considerably with material on the assignments, so attendance of each lab is imperative. Please note, **Labs are mandatory, and you must attend at least 50%** of the labs or you will receive an “N”, in the course. You must attend the lab section you are registered in.

R AND RSTUDIO STATISTICAL SOFTWARE

R is a freely available software for statistical analysis. In this course, it is expected that you will gain some familiarity and comfort in using R for statistical analysis and interpreting R output. RStudio will be used to organize analytic scripts.

R: <http://cran.stat.sfu.ca>

- Click the appropriate “Download and Install R” link and install the software from the downloaded file.

RStudio: <https://www.rstudio.com/products/rstudio/download/>

- RStudio Desktop is a free supplemental program that makes R more user-friendly and functional

TEXTBOOK

There is no required textbook for this course. All required content will be delivered through lectures, assignments, and discussion of course concepts. If you are interested in having a supplemental text as a guide, I recommend the following **OPTIONAL** texts:

Pagano, R. R. (2012). *Understanding statistics in the behavioral sciences* (10th edition). Belmont, CA: Wadsworth/Cengage Learning.

(free) Navarro, D. (2019). [*Learning statistics with R: A tutorial for psychology students and other beginners.*](#)

Field, A., Miles, J., & Field, Z. (2012). *Discovering Statistics Using R*. Thousand Oaks, CA: Sage Publications

Note: These texts are for supplemental reading only. Specific material from these texts will not be tested

COURSE REQUIREMENTS AND EVALUATION

Final grades will be calculated based on the following specific elements:

Evaluation	Date	% of Grade
Homework Assignments (4)	Throughout term	8%
Lab Assignments (5)	Throughout term	10%
Midterm Exam #1	Wednesday, July 20 th	20%
Midterm Exam #2	Wednesday, August 3 rd	20%
Final Exam (Cumulative)	Wednesday, August 17 th	25%
Research Report: Proposal	Thursday, July 21 st	2%
Research Report: Final Report	Friday, August 19 th	15%

Homework Assignments

There will be four (4) homework (HW) assignments throughout the term, each worth 2% of your total grade. Assignments are to be submitted by the **end of the day** on the day they are due. You will receive credit for completing assignments on time. Assignments will not be graded, but we will check your assignment for completeness and to ensure sufficient effort was given.

Note that the 8% for homework assignments are the easiest marks and most important work you will do. By doing them you will not only guarantee yourself 8/8 but you will be better prepared for the exams.

Group Lab Assignments

There will be five (5) lab assignments throughout the term, each worth 2% of your total grade. These assignments are to be **completed in groups of three** and **will be graded for correctness**. The assignments are designed to give you experience working with real data and become familiar using and interpreting results from R statistical software. Assignments distributed during the weekly lab and are to be submitted no later than Friday.

Research Report Project

This is your chance to experience the exotic, fast-paced world of academic research. **In groups of three**, you will have the opportunity to create your own study on a topic of your choice (mostly), and will be provided with a dataset unique to your study. Additional details on this project will be provided on Brightspace and discussed in class. NOTE: An original research report is required for successful completion of this course. *If you do not submit the research project paper you will receive an “N” in this course.*

There will be specific Lab time that will be devoted to working on your research project.

Exams

Exams will be open book, and will include calculations, short answer and multiple choice questions. **Bring Your Calculator.** Mid-term exams will focus on material covered since the last exam but may require use of previous material (statistics knowledge is cumulative). Final Exam will be cumulative but will focus on material that has not yet been tested.

Missed Exams: It is your responsibility to attend in-class exams as scheduled. **There will be no make-up exams.** If you miss an exam due to illness, accident, or family affliction, you must notify me (via email or telephone message) on or before the exam date. If your justification for missing an exam is accepted, then you will be assigned a score based on the class average for that midterm and on how well you do, relative to the rest of the class, on the remaining exams. **If you miss two or more tests/exams you will receive an “N” in the course.**

You must write the Final Exam to pass the course. If you are unable to attend the final exam you must apply to Records Services for a “Request for Academic Concession”, typically within 10 working days of the exam date. If an academic concession is granted for the final exam, an alternative date to write the make up exam must be arranged with the instructor. If you do not take the final exam, you will receive an “N” in this course. Link for RAC – <https://www.uvic.ca/registrar/students/appeals/acad-concession/index.php>

A FEW ADDITIONAL NOTES

Calculator

You will need a calculator for this course. Pretty much any calculator will do as long as it has a square root function. You are encouraged to bring your calculator to each lecture/tutorial. Calculators will be needed for tests/exams. I would not recommend using the calculator on your mobile device, as this will not be permitted during tests/exams.

Study Groups

Working together in groups of 2 to 4 people on a regular basis (not just the day before the exam) is helpful for some people. If you find this helpful I highly encourage you to seek out other interested students (the Brightspace discussion forum or labs could be a good place to arrange this). Also, I welcome study groups to come see me in pre-arranged office hours.

Grading

As per university policy, your final grade in the course will be based on your total percent score. Grades that end with a decimal point of 0.5 or above will be rounded to the next higher whole number, and grades that end with a decimal point below 0.5 will be rounded to the next lower whole number: Rounding will only occur for the final grade.

The final letter grade in the course will be based on total percent score as shown:

A+ = 90 - 100	B+ = 77 - 79	C+ = 65 - 69	F = 0 - 49
A = 85 - 89	B = 73 - 76	C = 60 - 64	N = incomplete
A- = 80 - 84	B- = 70 - 72	D = 50 - 59	

Course Registration

It is your responsibility to check your registration status by the drop deadline to ensure that you are registered in the course. Deadlines for 100% fee reduction is **July 10th**; last day to add courses is **July 11th**. Undergrad course adds after this date will require an Undergraduate Course Change form and are subject to the approval of the Director of the Academic Advising Centre. Last day for withdrawing without academic penalty of failure is **August 3rd**. University policy state that failing to attend lectures does not constitute official withdrawal.

STATEMENT OF BEHAVIOURAL EXPECTATIONS

I am committed to promoting, providing & protecting a positive, supportive, and safe learning environment for all of the members of this class. If you have any concerns regarding the activities that are intrinsic to PSYC 300B, please see me in the first week of the term. Students are encouraged to review the Student Code of Conduct available on the university website.

Respect for Diversity: It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, body size, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious or cultural events, please let me know so that we can make arrangements for you.

TENTATIVE CLASS SCHEDULE

This is a guide only. Topics covered in class may not correspond exactly with this outline.

Wk.	Date	Topic	Assignments
1	Mon July 4	Course intro; Hypothesis testing refresher	
1	Wed July 6	Power	
1	Thur July 7	<i>LAB 1: Introduction to R</i>	
1	Fri July 8	Power	
2	Mon July 11	<i>t</i> -test for Related Samples Design	HW Assign 1 Due (power)
2	Wed July 13	<i>t</i> -test for Independent Samples Design	
2	Thu July 14	<i>LAB 2: Descriptives & plots (Assignment 1)</i>	
2	Fri July 15	<i>t</i> test for Independent Samples Design	Lab Assign 1 Due
3	Mon July 18	Multi-group Designs (One-way ANOVA)	HW Assign 2 Due (t-tests)
3	Wed July 20	Exam #1 (20%): Power, t tests	
3	Thur July 21	<i>LAB 3: t tests (Assignment 2)</i>	Proposal Due
3	Fri July 22	Multi-group Design (One-way ANOVA)	Lab Assign 2 Due
4	Mon July 25	Multi-group Design (One-way ANOVA)	
4	Wed July 27	Multiple Comparisons	
4	Thur July 28	<i>LAB 4: One-way ANOVA (Assignment 3)</i>	
4	Fri July 29	Multiple Comparisons	Lab Assign 3 Due
5	Mon Aug 1	BC Day – No Class	
5	Wed Aug 3	Exam #2 (20%): One-way ANOVA, multiple comparisons	HW Assign 3 Due (1-way ANOVA)
5	Thur Aug 4	<i>LAB 5: Multiple Comparisons (Assignment 4)</i>	
5	Fri Aug 5	Factorial Designs (2-way ANOVA)	Lab Assign 4 Due
6	Mon Aug 8	Factorial Designs (2-way ANOVA)	
6	Wed Aug 10	Interactions in Factorial Designs	
6	Thur Aug 11	<i>LAB 6: Factorial Designs (Assignment 5)</i>	
6	Fri Aug 12	Non-Parametric Tests	Lab Assign 5 Due
7	Mon Aug 15	Non-Parametric Tests	HW Assign 4 Due (2-way ANOVA)
7	Wed Aug 17	Cumulative Final Exam (25%)	
7	Thur Aug 18	<i>LAB 7: Research paper support [Optional]</i>	
7	Fri Aug 19	<i>Wrap up</i>	Report Due

UNIVERSITY OF VICTORIA
Department of Psychology

Important Course Policy Information
Summer 2022

Prerequisites

Students who remain in courses for which they do not have the prerequisites do so at their own risk. Students who complete courses without prerequisites ARE NOT exempt from having to complete the prerequisite course(s) if such courses are required for the degree program.

Program Requirements

For more information see the UVic Calendar May 2022

<https://www.uvic.ca/calendar/future/undergrad/index.php#/programs?expanded=>

Registration Status

Students are responsible for verifying their registration status. Registration status may be verified using My Page, View Schedule. Course adds and drops will not be processed after the deadlines set out in the current UVic Calendar.

Commitment to Inclusivity and Diversity

The University of Victoria is committed to promoting, providing and protecting a positive and supportive and safe learning and working environment for all its members.

In the Event of Illness, Accident or Family Affliction

• ***What to do if you miss the final exam scheduled during the last day of classes***

Apply at Records Services for a "Request for Academic Concession", normally within 10 working days of the date of the exam. Records Services will forward the form to the instructor. If the concession is granted, the instructor will determine how to deal with the situation (for example, a deferred exam). Where a concession is not applied for or where such application is denied, an N grade will be entered on the student's academic record.

OR, you can download the Request for Academic Concession form here:

<http://www.uvic.ca/registrar/assets/docs/record-forms/rac.pdf>

• ***What to do if you miss an exam other than one scheduled during the last day of classes***

Do not apply at Records Services for a "Request for Academic Concession". Instead submit documentation of the illness, accident or family affliction directly to your course instructor (or designated teaching assistant).

• ***What to do if you require additional time to complete course requirements***

Apply at Records Services for a "Request for Academic Concession", normally within 10 working days of the end of the course. Records Services will forward the form to the instructor. If the concession is granted, the instructor will determine how to deal with the situation (for example, a deferred exam). Where a concession is not applied for or where such application is denied, an N grade will be entered on the student's academic record.

OR, you can download the Request for Academic Concession form here:

<http://www.uvic.ca/registrar/assets/docs/record-forms/rac.pdf>

Policy on Academic Integrity including Plagiarism and Cheating

The Department of Psychology fully endorses and intends to enforce rigorously the Senate Policy on Academic integrity

https://www.uvic.ca/calendar/future/undergrad/#/policy/Sk_0xsM_V?bc=true&bcCurrent=08%20-%20Policy%20on%20Academic%20Integrity&bcGroup=Undergraduate%20Academic%20Regulations&bcItem=08%20-%20Policy%20on%20Academic%20Integrity. It is of utmost importance that students who do their work honestly be protected from those who do not. Because this policy is in place to ensure that students carry out and benefit from the learning activities assigned in each course, it is expected that students will cooperate in its implementation.

The offences defined by the policy can be summarized briefly as follows:

1. **Plagiarism.** You must make sure that the work you submit is your work and not someone else's. There are proper procedures for citing the works of others. The student is responsible for being aware of and using these procedures.
2. **Unauthorized Use of an Editor.** The use of an editor is prohibited unless the instructor grants explicit written authorization.
3. **Multiple Submission.** Only under exceptional circumstances may a work submitted to fulfill an academic requirement be used to satisfy another similar requirement. The student is responsible for clarifying this with the instructor(s) involved.
4. **Falsifying Materials Subject to Academic Evaluation.** This includes falsification of data, use of commercially prepared essays, using information from the Internet without proper citation, citing sources from which material is not actually obtained, etc.
5. **Cheating on Assignments, Tests, and Examinations.** You may not copy the work of others in or out of class; you may not give your work to others for the purpose of copying; you may not use unauthorized material or equipment during examinations or tests; and you may not impersonate or allow yourself to be impersonated by another at an examination. The Department of Psychology has a policy of not making old examinations available for study purposes. Therefore, use of old exams without the express written permission of the instructor constitutes cheating by the user, and abetting of cheating by the person who provided the exam.
6. **Aiding Others to Cheat.** It is a violation to help others or attempt to help others to engage in any of the conduct described above.

Instructors are expected to make every effort to prevent cheating and plagiarism. This may include the assignment of seating for examinations, asking students to move during examinations, requests to see student identification cards, and other measures as appropriate. Instructors also have available to them a variety of tools and procedures to check for Internet and electronic media-based cheating. In instances of suspected or actual plagiarism or cheating, instructors, following prescribed procedures, are authorized to take steps consistent with the degree of the offence. These measures will range from a zero on the test or assignment or a failing grade for the course, probation within a program to temporary or even permanent suspension from the University.

Rights of Appeal are described in the Policy on Academic Integrity in the University calendar May 2022.

The definitive source for information on Academic Integrity is the University Calendar

Other useful resources on Plagiarism and Cheating include:

1. The Ombudsperson's office: <https://uvicombudsperson.ca/academic-integrity/>
The [Office of the Ombudsperson](#) is an independent and impartial resource to assist with the fair resolution of student issues. A confidential consultation can help you understand your rights and responsibilities. The Ombudsperson can also clarify information, help navigate procedures, assist with problem-solving, facilitate communication, provide feedback on an appeal, investigate and make recommendations. Phone: 250-721-8357; Email: ombuddy@uvic.ca Web: uvicombudsperson.ca.

2. UVic Library Resources <https://www.uvic.ca/library/help/citation/plagiarism/index.php>
https://www.uvic.ca/library/research/citation/documents/avoiding%20plagiarism%20guideUpdate_Sept_2013.pdf

Sexualized Violence Prevention and Response at UVic

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Office of Equity and Human Rights, Sedgewick Building, Room C115

Phone: 250 721 8021

Email: svpcoordinator@uvic.ca

Web: <https://www.uvic.ca/sexualizedviolence/>



BE WELL

A note to remind you to take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone.

Social Life, Friends, & Community at UVic:

Having a social network is an extremely important foundation for positive mental health. There are lots of benefits to joining clubs, course unions, intramurals and teams on campus.

<https://www.uvic.ca/undergraduate/housing-student-life/student-life/index.php>

Counselling Services:

The Student Wellness Centre can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.

<https://www.uvic.ca/student-wellness/contacts/student-wellness-team/index.php#ipn-counsellors>

Health Services:

The Student Wellness Centre also provides a full service primary health clinic for students.

<https://www.uvic.ca/student-wellness/contacts/student-wellness-team/index.php#ipn-physicians>

Centre for Accessible Learning:

The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations www.uvic.ca/services/cal/. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

Elders' Voices:

The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being. www.uvic.ca/services/indigenous/students/programming/elders/

Mental Health Supports and Services:

Mental health supports and services are available to students from all areas of the UVic community:

<https://www.uvic.ca/student-wellness/wellness-resources/mental-health/>