

# PSYCHOLOGY 300A - Section A01

# Statistical Methods in Psychology I Fall (Sept. - Dec.) 2021: CRN 12823

Time: MWTh 2:30 pm – 3:20 pm	Room: David Strong Building (DSB) C103	
Instructor: David Medler	Teaching Assistant: Josh Palmer; COR B327	
Email: dmedler@uvic.ca	Email: jmpalmer@uvic.ca	
Office: COR A270	Teaching Assistant: Michaella Trites; COR B329	
Office Hours: Tuesday 1:00 - 2:00	Email: mtrites@uvic.ca	
Friday 11:00 - 12:00	Office Hours: By Appointment	

#### COURSE DESCRIPTION AND OBJECTIVES

To provide a conceptual and practical understanding of descriptive and inferential statistical analysis as applied to experimental research in Psychology. Because I believe that learning and teaching is a bidirectional process between student and instructor, I anticipate that we will both prepare for each class.

#### REQUIRED TEXTBOOK

There is no required textbook for this class. I will make all slides available prior to lectures. Over the years, I have found that students do just as well from studying from the lecture slides as they do from additional notes. That being stated, you may find old versions of 300A CoursePacks available (which are fine to use, but some information has changed), and I am working on a new e-pub that will be released as it is completed (hopefully).

#### PREREQUISITES AND REGISTRATION

The prerequisites for ! 300A include:

- 1. PSYC 201 and the Academic Writing Requirement (AWR) fulfilled.
- 2. It is *highly recommended* that you have completed the degree MATH requirement, or that you have Math 12 (Pre-Calculus) or its equivalent (e.g, Math 120 at UVic) *before attempting this course*.

#### **TOPICS COVERED**

Visual & numerical description of univariate & bivariate data, including correlation and regression; probability theory as it relates to inferential analysis; hypothesis testing; application of ∠-test and -tests to single sample designs; communication of statistical findings.

#### GENERAL FORMAT

Course material will be presented in 4 sections through (potential) e-pub readings, lectures, quizzes, graded labs, and homework assignments. Please try to keep up with each topic.

#### **BRIGHTSPACE**

All course material, including detailed lecture notes, is available through BrightSpace, which you can access by logging in through MyPage or directly through <u>bright.uvic.ca</u>. This site will have all course lecture material with the accompanying overheads that are presented in class, as well as the recorded lectures. It will also have blank copies of homework assignments and their respective answer keys. Most files are in pdf format.

### IMPORTANT UVIC DATES

Date	Event	
Sept. 21, 2021	Last day for 100% reduction of tuition fees for standard first term and full year courses	
Sept. 24, 2021	Last day for adding courses that begin in the first term	
Oct 12, 2021	Last day for 50% reduction of tuition fees for standard courses	
Oct 31, 2021	Last day for withdrawing from first term courses without penalty of failure	

### **COURSE EVALUATION**

Comprehension of course material will be assessed through:

- (a) performance on 3 midterm exams (worth 15% each, 45% total)
- (b) performance on a cumulative final exam (worth 30%)
- (c) Labs (worth 10%)
- (d) online BrightSpace quizzes (worth 10%)
- (e) Homework (worth 5%)
- (f) In-class participation via iClickers (worth up to 3% in bonus marks)

## GRADING (% OF TOTAL MARKS)

Your final grade will be a straight percentage rounded at the 0.5% level to provide a whole number for

#### APPLICATIONS OF COURSE MATERIAL

Homework Assignments: You will be given 11 graded homework assignments worth a total of 5% of your final grade. The homework will provide you with opportunities to test your mastery of the material as well as to introduce you to  $\frac{1}{2}$  and/or  $\frac{1}{2}$ . There is simply NO substitute for wrestling a statistics problem to the ground yourself in order to understand the material. You will be required to enter your answers to the homework questions on BrightSpace. Answer keys will be provided once the homework closes. Please pay attention to closing dates and times, especially around exams. The lowest two homework grades will be dropped.

Labs: To further facilitate your integration of the course material, you will participate in GRADED lab exercises worth 10% of your final grade. There will be a total of 9 labs (7 regular labs and 2 /JA labs), with the lowest regular lab mark and lowest computer lab mark being dropped. Further information is provided in the Lab Document provided on BrightSpace. Please note, *Labs are mandatory, and you must attend them*. You must get a passing grade (minimum 50% average) on the labs, or you will receive an "N", in the course. As we drop the two lowest labs, there are no make-up labs, etc.

iClicker Responses: In order to assess concept attainment in class, iClickers will be used during the lectures. You will be graded on your correct responses. Each correct iClicker response will be worth 0.1% of your total grade, to a maximum of 3%. It is expected that there will be approximately 40+ iClicker questions distributed throughout the term, which means that you should bring your iClicker to every class. As only the top 30 iClicker points count towards your final mark, there are no make-up questions, etc.

#### 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. It is perfectly acceptable for a study group to come for assistance "en masse" during pre-arranged office hours.

### Computer Software for Statistical Analysis (R/JASP)

Some homework assignments require the use of computers. We will be using and/or JA for this class; please bear with me this term as I am slowly integrating and JA into the class after using SPSS for many years — there will likely be some bumps along the way. The advantage of /JA is that they are free, and can easily be installed on a home computer/laptop.

#### GENERAL STATEMENT OF BEHAVIOURAL EXPECTATIONS

The University of Victoria is committed to promoting, providing & protecting a positive, supportive, and safe learning and working environment for all its members and so am I. If you have any concerns regarding the activities that are intrinsic to Psyc 300A, please see me in the first week of the term.

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, socio-economic 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 events, please let me know so that we can make arrangements for you.

#### STATEMENT OF COPYRIGHT NOTICE

All lecture notes and course materials provided to you including all exams and quizzes are my intellectual property, and are made available to students for instructional purposes only. You do not have my permission to distribute my lecture notes or any exams or quizzes from the course,. Such distribution, through note- sharing sites or other means, violates the Policy on Academic Integrity.

# TENTATIVE SCHEDULE: PSYC 300A (A01)

Week	Date	Topic	Lab
	PART 1 — UNIVARIATE DESCRIPTION		
1	08-Sep Wed	Course Introduction	No Lab
	09-Sep Thurs	Lecture 1: Scales of Measurement	
2	13-Sep Mon	Lecture 1: Scales of Measurement	Orientation / Scales of Measurement
	15-Sep Wed	Lecture 2: Frequency Distributions	
	16-Sep Thurs	Lecture 2: Frequency Distributions	
3	20-Sep Mon	Lecture 2: Frequency Distributions	Frequency Distributions
	22-Sep Wed	Lecture 3: Central Tendency & Variability	
	23-Sep Thurs	Lecture 3: Central Tendency & Variability	
4	27-Sep Mon	Lecture 3: Central Tendency & Variability	No Formal Lab
	29-Sep Wed	Review / Catch-Up	
	30-Sep Thurs	National Day for Truth and Reconciliation - No Class	
5	04-Oct Mon	Exam 1: Lectures 1 - 3, plus labs and homework	R / JASP Basics
PART 2 — BIVARIATE DESCRIPTION			
	06-Oct Wed	Lecture 4: Correlation	
	07-Oct Thurs	Lecture 4: Correlation	
6	11-Oct Mon	No Class	Correlation
	13-Oct Wed	Lecture 4: Correlation	
	14-Oct Thurs	Lecture 5: Regression	
7	18-Oct Mon	Lecture 5: Regression	Regression
	20-Oct Wed	Lecture 5: Regression	
	21-Oct Thurs	Review / Catch-Up	
8	25-Oct Mon		

```
İ
                                          Ţ
! "#$%&"' () *+(,%- . /&(/&(0+#,' %' (1+,() */0*("*%2($+(&+"(* . 3%("*%(4,%,%5#/' /"%' ($+(' +(. "("*%/,(+) &(,/' 67((! "#$%&"' () *+(
0+-48\%"\%(0+\#,'\%'()/"*+\#"(4,\%,\%5\#/'/"\%'(9);(<=>(\%?\%-4"(1,+-(*.3/\&@("+(0+-48\%"\%("*\%(4,\%,\%5\#/'/"\%(0+\#,'\%A'B(/1('#0*(1,+-(*.3/\&@("+(0+-48\%"\%("*\%(4,\%,\%5\#/'/"%(0+#,'%A'B(/1('#0*(1,+-(*.3/\&@("+(0+-48\%"\%("*\%(4,\%,\%5\#/'/"%(0+#,'%A'B(/1('#0*(1,+-(*.3/\&@("+(0+-48\%"\%("*\%(4,\%,\%5\#/'/"%(0+#,'%A'B(/1('#0*(1,+-(*.3/\&@("+(0+-48\%"%("*\%(4,\%,\%5\#/'/"%(0+#,'%A'B(/1('#0*(1,+-(*.3/\&@("+(0+-48\%"%("*\%(4,\%,\%5\#/'/"%(0+#,'%A'B(/1('#0*(1,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("*(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("*(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("+(0,+-(*.3/\&@("*(*.3/\&@("*(0,+-(*.3/\&@("*(0,+-(*.3/\&@("*(*.3/\&@("*(0,+-(*.3/\&@(*.3/\&@("*(0,+-(*.3/\&@(*.3/\&@("*(0,+-(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(*.3/\&@(
0+#,'%'(.,%(,%5#/,%$(1+,("*%($%@,%%(4,+@,. - 7(
                                                                          Ţ
C+, (- +, %(/&1+, - . "/+&(' %%(" * %(DE/0(F. 8%&$., (! %4"% - G%, (HI HJ7(
                                                              ļ
ļ
                     ! "#$%&"' (. ,%(,%' 4+&' /G8%(1+,(3%,/12/&@("*%/,(,%@/' ",. "/+&(' ". "#' 7((: %@/' ",. "/+&(' ". "#' (- . 2(G%(3%,/1/%$(
                     #'/&@(K2(L.@%M(E/%) (! 0*%$#8%7((F+#,'%(. $$'(. &$($,+4'())/88(&+"(G%(4,+0%''%$(. 1"%,("*%($%. $V&%'('%"(
                     +#"(/&("*%(0#,,%&"(DE/0(F.8%&$.,7(
                                                                                                                                                        ļ
                     >*%(D&/3%,'/"2(+1(E/0"+,/. (/' (0+- - /""%$("+(4,+-+"%@M(4,+3/$)&@(. &$(4,+"%0")&@(. (4+'/"/3%(. &$(
                     '#44+,"/3%(. &$(' . 1%(8%. ,&/&@(. &$() +,6/&@(%&3/,+&- %&"(1+,(. 86(/"' (- %- G%,'7(
                     ļ
                               " #$%!%&!' &!()!*&+!, (--!%#. !)(/$0!. 1$, !-2#. ' +0. ' !' +3(/4!%#. !)&3, $0!. 1$, !5. 3(&'!
                     "##$$!&'!()*+,-.!/),01*).!2+,!&!3()45).'!2+,!"*&-)61*!7+8*)..1+89:!8+,6&$$!; 1'<18!=>!; +,?18@!
                      -&%.!+2!'<)!-&')!+2!'<)!)A&6B!!()*+,-.!/),O1*).!; 1$\frac{1}{2}!+,; &,-!'<)!2+,6!'+!'<)!18.',5*'+,B!!C2!'<)!
                     *+8*)..1+8!1.!@,&8')-:!'<)!18.',5*'+,!; 1$!-)'),618)!<+; !'+!-)&$!; 1'<!'<)!.1'5&'1+8!02+,!)A&6#$):!
                     &!-)2),,)-!)A&6EB!!F<),)!&!*+8*)..1+8!1.!8+'!&##$1)-!2+,!+,!;<),)!.5*<!&##$1*&'1+8!1.!-)81)-:!
                     &8!G!@,&-)!; 1$!H)!)8'),)-!+8!'<)!.'5-)8'l.!&*&-)61*!,)*+,-B!
                     J(:!\%+5!*\&8!-+; 8\$+\&-!'<)!()45).'!2+,!''*\&-)61*!7+8*)..1+8!2+,6!<),)
                     <''#KLL;;; B501*B*&L,)@1.',&,L&..)'.L-+*.L,)*+,-M2+,6.L,&*B#-2!
                              " #$%!%&!' &!()!*&+!, (--!$/!. 1$, !&%#. 3!%#$/!&/. !-2#. '+0. '!' +3(/4!%#. !)&3, $0!. 1$, !5. 3(&'!
                     N+!8+'!8+'!8+'!()^*+,-.!/),01^*).!2+,!8!3()45).'!2+,!''*8-)61^*!7+8^*)..1+898!!68.')8-!.5H61'!
                      -+*56)8'&'1+8!+2!'<)!1$\text{$\)...!\text{8**1-}\text{8'+1,!2\text{6}}\text{1\text{$\text{822}}\text{1*'1+8!-1,}\text{\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\ext{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$}\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\exitit}$$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$
                     -).1@8&')-!')&*<18@!&..1.'&8'EB!
                      •! "#$%!%&!' &!()!*&+!3. 6+(3. !$''(%(&/$0!%(, . !%&!2&, 50. %. !2&+3-. !3. 6+(3. , . /%-!
                      "##$%!&'!()*+,-.!/),01*).!2+,!&!3()45).'!2+,!"*&-)61*!7+8*)..1+89:!8+,6&$$!; 1'<18!=>!; +,?18@!
                      -&%.!+2!'<)!)8-!+2!'<)!*+5,.)B!!()*+,-.!/),01*).!; 1$$!2+,; &,-!'<)!2+,6!'+!'<)!18.',5*'+,B!!C2!'<)!
                     *+8*)..1+8!1.!@,&8')-:!'<)!18.',5*'+,!; 1$!-)'),618)!<+; !'+!-)&$!; 1'<!'<)!.1'5&'1+8!D2+,!)A&6#$):!
                     &!-)2),,)-!)A&6EB!!F<),)!&!*+8*)..1+8!1.!8+'!&##$1)-!2+,!+,!;<),)!.5*<!&##$1*&'1+8!1.!-)81)-:!
                     &8!G!@,&-)!; 1$\text{!H})!)8'),)-!+8!'<)!.'5-)8'|.!&*&-)61*!,)*+,-B!
                     J(:!%+5!*&8!-+; 8$+&-!'<)!()45).'!2+,!"*&-)61*!7+8*)..1+8!2+,6!<),)K!
                     <''#KLL;;; B501*B*&L,)@1.',&,L&..)'.L-+*.L,)*+,-M2+,6.L,&*B#-2!
```

ļ

Ţ

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/mentalhealth/undergraduate/connecting/index.php

## Counselling Services:

Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students. www.uvic.ca/services/counselling/

## Health Services:

University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives. www.uvic.ca/services/health/

# Centre for Accessible Learning

The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations <a href="www.uvic.ca/services/cal/">www.uvic.ca/services/cal/</a>. The sooner you let us know your needs, the quicker we can assist you in achiev.1

## 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 <a href="www.uvic.ca/svp">www.uvic.ca/svp</a>. 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: Sexualized violence resource office in EQHR, Sedgewick C119

Phone: 250.721.8021

Email: <a href="mailto:svpcoordinator@uvic.ca">svpcoordinator@uvic.ca</a>

Web: www.uvic.ca/svp