PSYCHOLOGY 300B – Section A05  
Statistical Methods in Psychology II  
Spring (Jan. - Apr.) 2020: CRN 22603

<table>
<thead>
<tr>
<th>Time: TWF 11:30 to 12:20</th>
<th>Room: ELL 061</th>
</tr>
</thead>
</table>
| Instructor: Thomas Ferguson  
Office: COR A216  
Office Hours: By appointment  
Phone: (email is preferred)  
Email: tomferg@uvic.ca | Teaching Assistant: Alejandra Contreras  
Office: TBA  
Office Hours: By appointment  
Phone: (email is preferred)  
Email: TBA |

Required Text: Psyc 300B CoursePack, from the CourseSpaces website

**OPTIONAL TEXT:** Howell, David C. (2017/2014). Fundamental Statistics for Behavioral Sciences (9th/8th Edition). May be on reserve in library. This text is for supplemental reading and supplemental homework. No material from the optional text will be examined.

**PREREQUISITES and REGISTRATION**

The prerequisites for Ψ300B include:

1. The completion of Psychology 300A with a minimum grade of 50%. This is non-negotiable.
2. The completion of core requirements for Psyc majors & Honours, or declaration of Major or Honours in program in Linguistics (BSc).

**NOTE regarding registration.** Registered students who do not attend at least one class during the first two scheduled class sessions may be dropped from the class. Priority for waitlisted students will be given to those students who have met all course pre-reqs and attended the first two class sessions. Students are responsible for checking their registration status before the end of the course change period (January 22, 2020). Students will not be added to the course after this time.

**COURSE MATERIAL for 300B on UVic’s CourseSpaces site:**

All course material, including detailed lecture notes and the full course syllabus, is available through CourseSpaces. This site will have all course lecture material with the accompanying overheads that are presented in class. It will also have class exercises and homework assignments and their respective answer keys. Files are in pdf format.

**COURSE OBJECTIVES**

1. To gain conceptual understanding of statistical analyses to advanced research designs.
2. To gain practical experience in the interpretation and communication of statistical analysis in a manner appropriate for those involved in psychological research.

**TOPICS COVERED**

Measurement (independent & dependent variables); Power; Inferential analysis for research designs under the Random Sampling Model of Hypothesis Testing. Research designs include related-samples, bivariate correlation, independent samples for \( k = 2, k > 2 \), & multi-factorial. Other topics include multiple comparisons, options for analyzing data when assumptions are violated, and analysis of frequency data.

**COURSE FORMAT**

Course material will be presented in 5 discrete sections through text readings, lectures, graded in-class group activities, graded homework assignments, and a course research project. Answer keys for exercises & homework will be available through the web site. *It is assumed that you have read the relevant course material prior to each lecture.*

- 1 -
COURSE EVALUATION

Comprehension of course material will be assessed through performance on:

a) 2 midterm exams (each worth 15% of your final grade)
b) a cumulative final exam (30%)
c) a research report (15%)
d) graded in-class assignments (5%)
e) online quizzes (10%)
f) iClicker responses (5%)
g) Graded Homework Assignments (5%)

GRADING (% of total marks)

Effective May 1, 2014, the letter grading system previously used at UVic was discontinued. Your final grade will be a straight percentage. Your final grade will be rounded at the 0.5% level (e.g., 84.50 will be rounded to 85; 84.49 will be rounded to 84.00). Rounding will only occur for the final grade.

NOTE: All deadlines & grades submitted for exams & various assignments are final. There are no make-up assignments, no make-up exams, no bonus or extra assignments that you can do post-hoc to alter your grades. The time to invest in achieving the best possible grade is during the course, not afterward.

EXAMS: There are a total of two midterms exams, each worth 15%, and one cumulative Final Exam worth 30%. Midterms will be written in class and will be 45 minutes each. The Final Exam will be scheduled during the formal exam period in April. All grades will be posted on CourseSpaces following each exam. It is your responsibility to check this posting to be sure the grade is correct.

Dates of Exams: Exam 1: February 4 (Tuesday) Exam 2: March 10 (Tuesday)
Final Exam: T.B.A.

Exam Format: Short answer and computational with emphasis on conceptual mastery of statistical material. Each exam will cover material from the text, class lectures, class exercises and relevant homework assignments.

POLICY ON MISSED EXAMS: (Please read as this is important!)

Midterms: You are responsible for attending the in-class midterms as scheduled. NO make-up midterms will be given. If you miss a midterm due to illness, accident, or family affliction, you must send me an email as soon as possible indicating that you have missed the midterm, and the reason for it. You must then supply written support for your absence (e.g., doctor’s note) within 10 days of missing the midterm.

In the case of illness, documentation should be dated within two days of the missed midterm, or earlier indicating that you are likely ill for a couple of days, including the date of the midterm. If you are too sick to attend the midterm, then you should see a doctor as soon as possible! Except in extreme circumstances (e.g., life-threatening illness) Medical Documentation dated after two days past the midterm date WILL NOT BE ACCEPTED.

If your documentation is accepted for the missing midterm, then a grade for that midterm will be generated by weighting your grades from the remaining midterms and final exam. Students who miss both midterms will receive a grade of “N” in the course as they will be deemed to have missed too much of the course material to have met course completion requirements.

Final Exam: If you are unable to attend the final exam you must apply to Records Services for a “Request for Academic Concession” (RAC), 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. Any student who does not take the final exam will receive an “N” in this course. The final, unlike the other two exams, will not be extrapolated and MUST be taken.

Link for RAC – https://www.uvic.ca/registrar/students/policies/appeals/rac-request.php
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan-07</td>
<td>Tuesday Course Intro/Syllabus</td>
</tr>
<tr>
<td></td>
<td>Jan-08</td>
<td>Wednesday Independent and Dependent Variables</td>
</tr>
<tr>
<td></td>
<td>Jan-10</td>
<td>Friday Hypothesis Testing – Related Samples</td>
</tr>
<tr>
<td>2</td>
<td>Jan-14</td>
<td>Tuesday Hypothesis Testing – Related Samples</td>
</tr>
<tr>
<td></td>
<td>Jan-15</td>
<td>Wednesday Hypothesis Testing – Correlations</td>
</tr>
<tr>
<td></td>
<td>Jan-17</td>
<td>Friday <strong>Class Exercise #1</strong></td>
</tr>
<tr>
<td>3</td>
<td>Jan-21</td>
<td>Tuesday Hypothesis Testing – Independent Samples</td>
</tr>
<tr>
<td></td>
<td>Jan-22</td>
<td>Wednesday Hypothesis Testing – Independent Samples</td>
</tr>
<tr>
<td></td>
<td>Jan-24</td>
<td>Friday Hypothesis Testing – Independent Samples</td>
</tr>
<tr>
<td>4</td>
<td>Jan-28</td>
<td>Tuesday Hypothesis Testing – Independent Samples</td>
</tr>
<tr>
<td></td>
<td>Jan-29</td>
<td>Wednesday Variability Explains ($r^2$)</td>
</tr>
<tr>
<td></td>
<td>Feb-04</td>
<td>Tuesday <strong>Class Exercise #2</strong></td>
</tr>
<tr>
<td>5</td>
<td>Feb-05</td>
<td>Wednesday Power</td>
</tr>
<tr>
<td>6</td>
<td>Feb-07</td>
<td>Friday Power</td>
</tr>
<tr>
<td></td>
<td>Feb-11</td>
<td>Tuesday Power</td>
</tr>
<tr>
<td></td>
<td>Feb-12</td>
<td>Wednesday Hypothesis Testing – Multigroup Design (ANOVA)</td>
</tr>
<tr>
<td></td>
<td>Feb-14</td>
<td>Friday <strong>Class Exercise #3</strong></td>
</tr>
<tr>
<td>7</td>
<td>Feb-18</td>
<td>Tuesday READING BREAK!</td>
</tr>
<tr>
<td></td>
<td>Feb-19</td>
<td>Wednesday READING BREAK!</td>
</tr>
<tr>
<td></td>
<td>Feb-21</td>
<td>Friday READING BREAK!</td>
</tr>
<tr>
<td>8</td>
<td>Feb-25</td>
<td>Tuesday Hypothesis Testing – Multigroup Design (ANOVA)</td>
</tr>
<tr>
<td></td>
<td>Feb-26</td>
<td>Wednesday Hypothesis Testing – Multigroup Design (ANOVA)</td>
</tr>
<tr>
<td></td>
<td>Feb-28</td>
<td>Friday Multiple Comparisons</td>
</tr>
<tr>
<td>9</td>
<td>Mar-03</td>
<td>Tuesday Multiple Comparisons</td>
</tr>
<tr>
<td></td>
<td>Mar-04</td>
<td>Wednesday Multiple Comparisons</td>
</tr>
<tr>
<td></td>
<td>Mar-06</td>
<td>Friday <strong>Class Exercise #4</strong></td>
</tr>
<tr>
<td>10</td>
<td>Mar-10</td>
<td>Tuesday EXAM #2: Topics 6 to 8, Class exercise 3 &amp; 4, Homework</td>
</tr>
<tr>
<td>11</td>
<td>Mar-11</td>
<td>Wednesday Hypothesis Testing – Multifactorial Design</td>
</tr>
<tr>
<td></td>
<td>Mar-13</td>
<td>Friday Hypothesis Testing – Multifactorial Design</td>
</tr>
<tr>
<td></td>
<td>Mar-17</td>
<td>Tuesday Hypothesis Testing – Multifactorial Design (Guest Lecture?)</td>
</tr>
<tr>
<td></td>
<td>Mar-18</td>
<td>Wednesday <strong>Class Exercise #5</strong></td>
</tr>
<tr>
<td></td>
<td>Mar-20</td>
<td>Friday Interactions in Factorial Designs</td>
</tr>
<tr>
<td>12</td>
<td>Mar-24</td>
<td>Tuesday Interactions in Factorial Designs</td>
</tr>
<tr>
<td></td>
<td>Mar-25</td>
<td>Wednesday Options when assumptions are violated</td>
</tr>
<tr>
<td></td>
<td>Mar-27</td>
<td>Friday Options when assumptions are violated</td>
</tr>
<tr>
<td>13</td>
<td>Mar-31</td>
<td>Tuesday Analysis of Frequency Data</td>
</tr>
<tr>
<td></td>
<td>Apr-01</td>
<td>Wednesday Analysis of Frequency Data</td>
</tr>
<tr>
<td></td>
<td>Apr-03</td>
<td>Friday <strong>Class Exercise #6</strong></td>
</tr>
</tbody>
</table>
APPLICATION OF COURSE MATERIAL

Homework Assignments: You will be given 12 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. 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 CourseSpaces. Answer keys will be provided once the homework has been closed. The lowest two homework grades will be dropped.

Class Exercises: To further facilitate your integration of the course material, you participate in GRADED class exercises (worth 5%). You will be assigned to groups with 5-6 members, and you will work together to complete these exercises over the term. Each group member is expected to contribute equally to the final product. If a person has concerns regarding the contribution of one or more members of the group she or he should speak to the instructor; it is possible to request re-assignment to a different group. You are expected to be prepared for the class exercises. Each assigned exercise is worth equal points. Your worst exercise will automatically be dropped when computing the contribution of exercises to your final grade. Note: If you miss a class exercise, there are NO “make-up” exercises, nor are there opportunities to complete an exercise on your own for a grade.

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 5%. It is expected that there will be approximately 60+ iClicker questions distributed throughout the term, which means that you should bring your iClicker to every class. As only the top 50 iClicker points count towards your final mark, there are no make-up questions, etc.

Research Project Report: An original research report is REQUIRED for successful completion of this course. This term you will have the opportunity to create your own study following the guidelines on CourseSpaces, “Research project”. You will be provided with a data set unique to your study. If you do not turn in the research project paper you will receive an “N” in this course.

MISSED A CLASS?
Get notes from a classmate; lectures typically cover some, but not all, of the material in the CoursePack. All material distributed in class (e.g., class exercises) is also available on CourseSpaces.

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 PROGRAM FOR STATISTICAL ANALYSIS
Some homework assignments require the use of computers. We will be using R for this class; please bear with me this term as I am integrating R into the class — there will likely be some bumps along the way. For those students who would like to learn how to program in R, it is anticipated that we will be offering some tutorial sessions dedicated to R. The majority of our computerized data analysis, however, will be conducted through a dedicated website for PSYC 300B which can be accessed via a standard web browser. It is essential that you gain some level of familiarity and comfort in using this computer software in 300B as we will be using it to analyze data for our project.

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 requirements or activities that are intrinsic to PSYC 300B, please see me in the first week of the academic term.

Class Attendance: In accordance with the Academic Calendar, attendance at and participation in all class sessions is assumed and expected. If you arrive late for class, you may be refused admission to the class. If you arrive late for exams/assignments, you may be refused the opportunity to write or may receive a 0.

All materials in this course are intended for your personal use only and may not be posted elsewhere.
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 pages 309-312 of the UVic Calendar September 2019.

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 (See UVic Calendar, September 2019, p. 49-51)

• 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://web.uvic.ca/calendar2019-09/pdfs/undergraduate-201909_Part4.pdf](https://web.uvic.ca/calendar2019-09/pdfs/undergraduate-201909_Part4.pdf), (p.45-47, UVic Calendar September 2019). 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. **Being an Accessory to Offences.** This means that helping another student to cheat (for instance, by showing or communicating to them answers to an assignment, or by allowing them to view answers on an exam) is an academic offence.

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 (on p. 46 in September 2019).

The definitive source for information on Academic Integrity is the University Calendar (p. 45-47 in September 2019) [https://web.uvic.ca/calendar2019-09/pdfs/undergraduate-201909_Part4.pdf](https://web.uvic.ca/calendar2019-09/pdfs/undergraduate-201909_Part4.pdf)

Other useful resources on Plagiarism and Cheating include:

1. The Study Solutions Office: [https://www.uvic.ca/services/counselling/success/study/index.php](https://www.uvic.ca/services/counselling/success/study/index.php)
2. The Ombudsperson’s office: [https://uvicombudsperson.ca/tips/plagiarism/](https://uvicombudsperson.ca/tips/plagiarism/)
   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.
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 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: www.uvic.ca/mentalhealth/undergraduate/
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: Sexualized violence resource office in EQHR, Sedgewick C119

Phone: 250.721.8021

Email: svpcoordinator@uvic.ca

Web: www.uvic.ca/svp