

**PSYO 373: 2020 Winter Term 2 Course Outline**  
**(January – April, 2023)**  
**Advanced Research Methods and Statistics**

Class Times: Monday & Wednesday, 15:30 – 17:00

Lab Times: Tuesday, 17:00 - 20:00

Instructor: Brian O'Connor, Ph.D.

Office: ART 330

Office Hours: After class, or by appointment

E-mail: [brian.oconnor@ubc.ca](mailto:brian.oconnor@ubc.ca)

Lab Instructors Zak Draper ([zakary.draper@ubc.ca](mailto:zakary.draper@ubc.ca))

Rebecca Godard ([rjgodard@mail.ubc.ca](mailto:rjgodard@mail.ubc.ca))

Course Info: <https://students.canvas.ubc.ca>

**CONTENT:** Potential topics include: philosophy of science; statistical reasoning; psychological measurement; multiple regression; multivariate analysis of variance; discriminant analysis; canonical correlation; factor analysis; structural equation modeling; and meta-analysis.

**FORMAT:** This will be a seminar course with required readings for each class that will be discussed by the group.

**COURSE MATERIALS:** Readings will be available from the internet, or from course-packs at the UBCO bookstore, or from the reserve section of the library. The laboratories will be conducted using R.

**EXAMINATIONS:** There will be two examinations based on the class readings and discussions, one in February and one in April.

**LABS:** The laboratory portion of the course will focus on data analyses using modern statistical software. Grades for the laboratory portion of the course will be based on lab attendance, completion of the lab assignments, and on quiz grades. If you are to miss a lab for a legitimate reason, please notify the lab instructors before the lab (do not use Canvas email).

**TERM PAPER:** The term paper will involve writing a research proposal for a study that involves at least three statistical methods that are covered in the class readings.

## **GRADING SCHEME:**

February Exam	30%
April Exam	30%
Labs	20%
Term Paper	5%
Class Participation	15%

Grades for class participation require verbal contributions to class discussions and demonstrations of familiarity with the course readings. Grades for class participation cannot be given for missed classes, for whatever reason, and will be adjusted accordingly.

**COURTEOUS BEHAVIOR IS REQUIRED:** Repeated late-arrivals to class, early departures from class, talking to others while the instructor or other students are speaking, and eating during class are disruptive and rude forms of classroom behavior. Other instructors may attempt to ignore and talk over these disruptions but they will not be tolerated in this course. Students who engage in such behaviors will have points subtracted from their grades for class participation.

**COURSE LEARNING OBJECTIVES:** The course objectives are to: (1) help students become comfortable reading advanced statistics and methods materials; (2) help students become comfortable talking about advanced statistics and methods issues; (3) enhance students' abilities to write about advanced statistics and methods issues; (4) help students run a variety of advanced statistical analyses on their own; and (5) provide students with an array of resources and exercises for advanced statistical procedures that should be helpful in the years ahead.

Students can become comfortable reading advanced statistics and methods materials by seriously attempting to read the assigned materials before coming to each class, and by becoming actively involved in the discussions every class. The class discussions should help resolve any misunderstandings or uncertainties that may have occurred during the pre-class readings.

Students can become comfortable talking about advanced statistics and methods issues by getting involved in the discussions in every class.

Students can improve their abilities to write about advanced statistics and methods issues by carefully preparing their answers to the potential exam questions. The instructor is willing to preview potential exam question answers and provide feedback about whether answers are on track or not.

Students can learn how to run a variety of advanced statistical analyses in the laboratory portion of the course.

By the end of the course, students will have an array of resources and exercises for advanced statistical procedures that should be helpful in the years ahead. It is strongly recommended that students create a folder on their computers with the relevant documents for each procedure that is covered in the course.

Progress on meeting the first four objectives will be evaluated via the four exams, via participation in the class discussions, and via the labs. Students are encouraged to contact the instructor for feedback on their progress during the course.

For most people, advanced statistics and methods issues are learned slowly rather than instantaneously. Much repetition with different datasets is usually required before mastery and comfort settle in. Extensive repetition cannot be provided in this course because there are too many important topics to cover. Having excellent resources and exercises should nevertheless assist students in later developing their expertise with the various methods. Attempts to use the procedures in one's own research in the future should be facilitated by having read about, talked about, written about, and run the procedures during the course and by having saved the course materials.

**ACADEMIC INTEGRITY:** The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result

in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences. A more detailed description of academic integrity, including the policies and procedures, may be found at <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,54,111,959>.

**STATEMENTS FROM THE BARBER SCHOOL:** During this pandemic, the shift to online learning has greatly altered teaching and studying at UBC, including changes to health and safety considerations. Keep in mind that some UBC courses might cover topics that are censored or considered illegal by non-Canadian governments. This may include, but is not limited to, human rights, representative government, defamation, obscenity, gender or sexuality, and historical or current geopolitical controversies. If you are a student living abroad, you will be subject to the laws of your local jurisdiction, and your local authorities might limit your access to course material or take punitive action against you. UBC is strongly committed to academic freedom, but has no control over foreign authorities (please visit <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,33,86,0> for an articulation of the values of the University conveyed in the Senate Statement on Academic Freedom). Thus, we recognize that students will have legitimate reason to exercise caution in studying certain subjects. If you have concerns regarding your personal situation, consider postponing taking a course with manifest risks, until you are back on campus or reach out to your academic advisor to find substitute courses. For further information and support, please visit: <http://academic.ubc.ca/support-resources/freedom-expression>

**STATEMENTS FROM THE PSYCHOLOGY DEPARTMENT: Requirements for Technology for Online Delivery of Courses:** In order to engage with this course online, students are required to have a laptop or desktop computer and a stable internet connection.

**Technical Issues During Examinations:** As per UBC policy, all examinations must be completed during the scheduled course time. Out of fairness to all students, there are no exceptions to this policy. The instructor and/or TAs will be available during all examinations via Zoom (or Collaborate Ultra) should students encounter technical difficulties. It is the responsibility of the student to ensure that any technical issues are reported to the instructor immediately. If you cannot connect with the instructor and/or TAs via Zoom (or Collaborate

Ultra), please document the issue or technical concern via a screenshot. This is the only circumstance in which it is appropriate to document (i.e., screenshot) exam material. Failing to report technical issues in a timely manner, may result in the issue not being resolved and may negatively impact your grade. **Academic Integrity Examination Policies for Closed-Book Exams:** The examinations in this course are all closed-book, so you are not permitted to access any of the course materials, including your notes, during the exam. You are not to use any search engines or other programs except for the program required to complete the exam. Nor are you to communicate with anyone – you are to work independently. If you violate these conditions you have engaged in Academic Misconduct and will be subject to the consequences articulated in the Academic Integrity section. Communication with other students (written, text, verbal, etc.) is also not permitted and will constitute Academic Misconduct. **Policy on Rounding Final Grades:** It is policy in this course that final grades cannot be adjusted (through extra assignments or otherwise) in order to achieve a passing mark, higher letter grade etc. In order to maintain fairness within this course, requests for additional assignments as well as requests to round or “bump up” final grades will be denied.

**EQUITY, HUMAN RIGHTS, DISCRIMINATION AND HARASSMENT:** UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that is free from human rights-based discrimination and harassment. Under UBC’s Policy 3 on Discrimination and Harassment, UBC prohibits discrimination and harassment on the basis of the following grounds: age, ancestry, color, family status, marital status, physical or mental disability, place of origin, political belief, race, religion, sex, sexual orientation or unrelated criminal conviction. If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity Office, your administrative head of unit, and/or your unit’s equity representative.

**Sexual Violence Prevention and Response Office:** A safe and confidential place for UBC students, staff and faculty who have experienced sexual violence regardless of when or where it took place. Just want to talk? We are here to listen and help you explore your options. We can help you find a safe place to stay, explain your reporting options (UBC or police), accompany you to the hospital, or support you with academic accommodations. You have the right to choose what happens next. We support your decision, whatever you decide. Visit [svpro.ok.ubc.ca](http://svpro.ok.ubc.ca) or call us at 250.807.9640

Independent Investigations Office: If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the IIO. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness. You can report your experience directly to the IIO via email: [director.of.investigations@ubc.ca](mailto:director.of.investigations@ubc.ca) or by calling 604.827.2060 or online by visiting [investigationsoffice.ubc.ca](http://investigationsoffice.ubc.ca)