

Course Outline

COURSE: **CRCJ 3001A: Quantitative Methods in Criminology**

TERM: **Fall 2026**

PREREQUISITES: **CRCJ 1000 & Third-year standing in the B.A. Honors program in Criminology and Criminal Justice**

CLASS: Day & Time: **Wednesdays, 6:05 pm – 8:55 pm**
Modality: **In-person**
Room: **Please check Carleton Central for current room location**

Instructor: **Dr. Hamed Mousavi**

CONTACT: Office **Mon. 4:00-5:00 (Via Zoom, see Brightspace for details)**
Hrs: **Or by appointment for in-person meetings**

Email: **hamedmousavi@cmail.carleton.ca**

TEACHING ASSISTANTS:

TBA

*You must use your Carleton email address in all correspondence with the

Professor/TA. Link to Brightspace page:

<https://brightspace.carleton.ca/d2l/home/449237>

ACKNOWLEDGEMENT & AFFIRMATION

ANISHNABE

Ni manàdjiyànàni Màmìwininì Anishinàbeg, ogog kà nàgadawàbandadjig iyo akì eko weshkad. Ako nongom ega wìkàd kì mìgiwewàdj.

Ni manàdjiyànàni kakina Anishinàbeg ondaje kaye ogog kakina eniyagizidjig enigokamigàg Kanadàng eji ondàpinangig endàwàdjìn Odàwàng.

Ninìsidawinawànàni kenawendamòdjig kije kikenindamàwin; weshkinìgidjig kaye kejeyàdizidjig.

Nigijeweninmànàni ogog kà nìgànì sòngideyedjig; weshkad, nongom; kaye àyànikàdj.

ENGLISH

We pay respect to the Algonquin people, who are the traditional guardians of this land. We acknowledge their longstanding relationship with this territory, which remains unceded.

We pay respect to all Indigenous people in this region, from all nations across Canada, who call Ottawa home.

We acknowledge the traditional knowledge keepers, both young and old.

And we honor their courageous leaders: past, present, future.

1. COURSE DESCRIPTION

This course introduces the logic and practice of quantitative research in criminology. The emphasis is not on statistics, but rather on understanding how quantitative evidence is produced, how research designs support or weaken particular claims, and how findings should be interpreted and communicated.

We will move through the research process from the formulation of a question to the presentation of results. The course covers theory and hypotheses, ethics, research design and causality, measurement, sampling, surveys, experiments and quasi-experiments, structured observation, administrative and secondary data, and basic quantitative analysis.

Students will complete a midterm and a final exam, as well as two pieces of written work: a critical analysis of a published quantitative study and a final quantitative research proposal. The proposal may be based on primary or secondary data, but students will not recruit participants or collect data for the purposes of this course. One

class is devoted specifically to statistics and software. The aim of that class is to develop statistical literacy and accurate interpretation, not mathematical derivation.

Course format

The course is organized around twelve three-hour Wednesday classes. A typical class will combine lecture, discussion of a published study or data source, and an applied exercise. Students should complete the assigned reading before class and be prepared to work with research questions, measures, sampling plans, questionnaires, and short extracts from quantitative studies.

2. LEARNING OUTCOMES

By the end of the course, students should be able to:

- Explain the principal stages of the quantitative research process and distinguish descriptive, associational, and causal questions.
- Prepare a research question and develop appropriate hypotheses based on theory and prior research.
- Identify levels of measurement and assess reliability and validity.
- Evaluate probability and non-probability sampling strategies and explain their implications for bias, representativeness, and generalization.
- Compare the strengths and limitations of surveys, experiments, quasi-experiments, structured observation, administrative records, and other forms of secondary data.
- Identify ethical, privacy, equity, and data-governance issues in quantitative research, including research involving Indigenous, racialized, and otherwise marginalized populations.
- Read and interpret frequency distributions, summary statistics, graphs, cross-tabulations, basic tests of association, and statistical software output.
- Critically assess a published quantitative study and design and communicate a feasible quantitative study in a research proposal.

3. TEXTS & COURSE MATERIALS

Required textbook

Bell, E., Kleinknecht, S., & Bryman, A. (2026). *Social Research Methods* (7th Canadian ed.). Oxford University Press.

The textbook is available at Amazon.ca for \$117 (A second-hand copy of the seventh Canadian edition may also be used). The textbook will also be available for sale at the university bookstore.

Other required readings

Selected articles will be made available through Brightspace or Ares. There is no additional purchase cost for these readings.

4. COURSE CALENDAR

Weekly schedule

Class / date	Topic	Required reading	Possible exercises
1 Sept. 9	Introduction: what is quantitative research? Course expectations; the place of quantitative evidence in criminology; stages of the research process; description, association, and causation; reading the structure of an empirical article.	Ch. 1	Article-reading exercise. Introduction to the article critique and final proposal.
2 Sept. 16	From a topic to a researchable question; Theory and evidence; literature searches; research questions; hypotheses; units of analysis; ecological and reductionist errors; feasibility.	Ch. 1; Ch. 15, selected sections	Question clinic. Proposal milestone: two possible topics and a provisional question.
3 Sept. 23	Research ethics, power, and responsible data practices Consent, risk, privacy, confidentiality, secondary use of data, research with criminalized populations, Indigenous data governance, and the measurement of race and inequality.	Ch. 3; supplementary reading on Brightspace	Ethics case exercise. Proposal milestone: ethics and data-governance note.
4 Sept. 30	Research design, causality, and validity Cross-sectional and longitudinal designs; comparison and control; internal and external validity; bias, confounding, and limits on causal claims.	Ch. 2	Design comparison using published criminological studies. Article-critique workshop.

Class / date	Topic	Required reading	Possible exercises
5 Oct. 7	Concepts, variables, and measurement Conceptualization and operationalization; dependent and independent variables; levels of measurement; indicators, indexes, and scales; reliability and validity; recoding and missing values.	Ch. 4	Measurement workshop. Proposal milestone: draft concept-and-variable table.
6 Oct. 14	Sampling and generalization Populations and sampling frames; probability and non-probability sampling; sampling error; nonresponse and undercoverage; representativeness and limits of generalization.	Ch. 7	Sampling-plan exercise and midterm review. Article critique due Friday, Oct. 16, at 11:59 p.m.
7 Oct. 21	Midterm examination and proposal workshop	Review Chapters. 1-4 and 7	Midterm examination (20%; 75 minutes). Proposal workshop after the examination.
Fall break Oct. 28	No class	-	-
8 Nov. 4	Survey research and questionnaire design Modes of administration; question wording and order; response categories; social desirability and recall; pilot testing; response rates; secondary analysis of survey data.	Ch. 5	Questionnaire critique. Article critique returned with feedback.
9 Nov. 11	Structured observation, administrative records, and other secondary data Observation schedules; inter-rater reliability; official and administrative data; victimization surveys; quantitative content analysis; missing data and institutional classification practices.	Ch. 6; Ch. 12, selected sections	Codebook and data-quality exercise. Proposal milestone: design, data source, and sampling plan.

Class / date	Topic	Required reading	Possible exercises
10 Nov. 18	Experiments, quasi-experiments, and evaluation research Random assignment; control groups; field and natural experiments; pre/post and comparison-group designs; selection effects, attrition, contamination, and ethical limits.	Ch. 2, selected sections; supplementary study	Design-a-study exercise. Proposal milestone: revised design and threats-to-validity note.
11 Nov. 25	Statistics and quantitative data analysis Data preparation; frequency distributions; percentages; mean and median; tables and graphs; cross-tabulations; basic tests of association; statistical versus substantive significance.	Ch. 8	Guided analysis using a practice dataset. This is the only class devoted specifically to statistics.
12 Dec. 2	Course review and integration Review of the full research process; comparison of designs and data sources; common threats to validity; interpretation of quantitative evidence; preparation for the final examination.	Review all assigned chapters and course materials	Final examination review.
13 Dec. 9 (Drop in Session)	Developing and writing a quantitative research proposal.		Proposal workshop. Research proposal due Thursday, Dec. 10, at 11:59 p.m.

5. EVALUATION

Assessment	Weight	Date	Format/location
Quantitative research article critique	15%	October 16, 2026, 11:59 p.m.	Individual; Brightspace
Midterm examination	20%	October 21, 2026	In class; 75 minutes
Quantitative research proposal	30%	December 10, 2026, 11:59 p.m.	Individual; Brightspace
Final examination	35%	Formal exam period	Modality: In-person; 3 hours

Midterm examination - 20%

The midterm covers Classes 1-6 and the corresponding readings. It will include multiple-choice questions, short-answer questions, and a brief applied research-design problem. Students will be evaluated on conceptual accuracy, their ability to distinguish related methodological terms, and their application of course concepts to a research scenario. The examination will be written during Class 7 and will last 75 minutes. It is closed-book.

Quantitative research article critique - 15%

Students will submit a 1,250-1,500-word critical analysis of one peer-reviewed quantitative article in criminology, criminal justice, sociology, or a closely related field. The article must be selected from a list provided by the instructor or approved in advance. The purpose of the assignment is to evaluate the study's methodology rather than to summarize its substantive topic or findings.

The critique should address:

- the research question, hypotheses, and theoretical logic;
- the research design, data source, unit of analysis, and sampling strategy;
- the operationalization of the principal concepts and the reliability and validity of the measures;
- the principal sources of bias and the limits of generalization or causal inference;
- whether the conclusions are supported by the evidence presented; and
- at least two concrete ways in which the study could be improved.

Quantitative research proposal - 30%

Students will submit a 2,500-word proposal for a feasible quantitative study addressing a criminological or criminal-justice question. The word limit excludes the title page, references, tables, and appendices. The study may propose collecting primary data or analyzing existing data, but students must not recruit participants or collect data for this assignment.

The proposal should include:

- a concise statement of the research problem and its criminological significance;
- a focused research question and, where appropriate, clearly stated hypotheses;
- a focused review of the relevant literature and a clear theoretical rationale, normally drawing on at least eight peer-reviewed sources;
- a justified research design and an explanation of how it addresses the research question;
- the target population, unit of analysis, proposed sampling strategy, and likely limits of generalization;
- the principal concepts and variables and how they will be operationalized;
- the proposed source and method of data collection, or a clear description of the secondary dataset to be used;
- ethical, privacy, equity, and data-governance considerations; and
- anticipated limitations and threats to validity.

Final examination - 35%

The in-person final examination will be scheduled by Scheduling and Examination Services during the formal examination period. It will be cumulative. The planned format is a combination of multiple-choice, short-answer, and applied scenario questions. Students will be assessed on their ability to define and distinguish methodological concepts, evaluate research designs, identify threats to validity, interpret basic quantitative evidence, and propose improvements to a study. The exam lasts three hours.

Submission, late work, and extensions

Written assignments must be submitted to the appropriate Brightspace dropbox in the file format stated in the assignment instructions. Students are responsible for confirming that the correct and readable file has been uploaded. Work sent by email will not be treated as submitted unless the instructor has given prior written permission.

Late article critiques will be penalized 5% of the assignment grade for each calendar day, including weekends, for up to seven days. Work submitted more than seven days late will not normally be accepted without approved academic consideration. Requests for extensions or academic consideration should be made as early as possible and must follow the University's [Academic Consideration Policy](#).

Collaboration and individual work

Class discussion, peer feedback, and general help with statistical software are encouraged. The article critique and research proposal must nevertheless be completed and written individually. Students may not share completed drafts, written passages and article analyses. Any help received that materially affects submitted work must be acknowledged.

Re-use of previous work

Students may not submit substantially the same work, in whole or in part, that they have submitted for credit in another course or assignment without the instructor's prior written permission. Where prior work is approved for limited re-use, it must be cited and clearly identified.

Writing, citation, and presentation

Written work should use APA 7th edition citation style. Evaluation will take account of clarity, organization, grammar, accurate citation, and professional presentation, in addition to the substantive criteria listed above.

Requests for reconsideration of a grade

A student who believes that an assessment has been marked incorrectly should first review the feedback. A written request for reconsideration should be submitted to the TA within seven working days of the assignment being returned and should identify a specific grading issue. If the student is unable to resolve the issue with the TA, they can contact the professor. The entire assessment may be reviewed, and the resulting grade may remain the same, increase, or decrease.

Final grade approval

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.

A+	90-100	A	85-89	A-	80-84
B+	77-79	B	73-76	B-	70-72
C+	67-69	C	63-66	C-	60-62
D+	57-59	D	53-56	D-	50-52
F	Below 50				

6. GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

The limited use of generative AI tools is permitted for brainstorming search terms, generating ungraded practice questions, or identifying possible grammatical problems in text already written by the student. Any permitted use must be disclosed in a short note at the end of the assignment identifying the tool, the date, the purpose for which it was used, and how the student checked and revised the output.

Generative AI may not be used to produce or substantially write any part of the article critique or research proposal; analyze the assigned article; conduct the literature review; select or justify a research design; perform or interpret statistical analysis. Fabricated or unverified references remain the student's responsibility.

7. PLAGIARISM and ACADEMIC INTEGRITY

The University Academic Integrity Policy defines plagiarism as “*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one's own.*” This includes reproducing or paraphrasing portions of someone else's published or unpublished material, regardless of the source, and presenting these as one's own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, artworks, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT)

- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment
- using another's data or research findings without appropriate acknowledgment
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one's own
- failing to acknowledge sources with proper citations when using another's work and/or failing to use quotation marks.

8. INTELLECTUAL PROPERTY

Classroom teaching and learning activities, including lectures, discussions, presentations, etc., by both instructors and students, are copy protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations, outlines, and other materials, are also protected by copyright and remain the intellectual property of their respective author(s).

Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder(s).

9. STATEMENT ON STUDENT MENTAL HEALTH

As a student, you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. For more information, please consult <https://wellness.carleton.ca/>

10. ACADEMIC ACCOMMODATION

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances, are outlined on the Academic Accommodations website (<https://students.carleton.ca/course-outline/>)