

Advanced Research Methods

Course code: POS509

Term and year: Spring 2026

Day and time: Fridays 11:15-14:00

Instructor: Milan Babík

Instructor contact: milan.babik@aauni.edu

Consultation hours: Fridays 14:00-15:00 or by appointment

Credits US/ECTS	3/6	Level	
Length	15 weeks	Pre-requisite	
Contact hours	42 hours	Course type	

1. Course Description

This is an advanced course in concepts and methods of political science. Its overarching goal is to provide students with the specific language and tools necessary to read, understand, critically evaluate, and start performing empirical political science research. Quantitative analysis represents the dominant approach in mainstream Anglophone IR research, so it will receive emphasis in this course. However, it is not the only approach available. Therefore, throughout the semester attention will be brought repeatedly to the limits of the empirical approach to the study of politics.

2. Student Learning Outcomes

Upon completion of this course, students will be familiar with the history and philosophy of science and with the conceptual toolkit used by empirical political scientists. They will be able to identify different research designs, compare their relative strengths and weaknesses, and make effective use of this knowledge in designing their own research project. They will learn several data collection techniques and know how to formulate an original claim with the help of a literature review. They will grasp the logic of causal inference, know basic observational and inferential statistics, and be able to use them effectively to test hypotheses.

Required Materials

Textbooks

- Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (University of Chicago Press, 1970)
- Janet Buttolph Johnson, H.T. Reynolds, Jason D. Mycoff, *Political Science Research Methods*, 8th ed. (CQ Press, 2016)
- Jay L. Devore and Roxy L. Peck, *Statistics: The Exploration and Analysis of Data*, 6th ed. (Duxbury Press, 2007)

Articles and book chapters

- Karl R. Popper, *The Logic of Scientific Discovery* (Basic Books, 1959), 13-30.
- Stephen Toulmin, "Does the Distinction between Normal and Revolutionary Science Hold Water?" and Karl R. Popper, "Normal Science and Its Dangers," in Imre Lakatos and Alan Musgrave, eds., *Criticism and the Growth of Knowledge* (Cambridge University Press, 1970), 39-58.

- E.H. Carr, "The Science of International Politics," in *idem, The Twenty Years' Crisis, 1919-1939*, 2nd ed. (Harper & Row, 1946), vii-21.
- Alasdair MacIntyre, "Is a Science of Comparative Politics Possible?" in *idem, Against the Self-Images of the Age* (Schocken, 1971), 260-79.
- Gabriel Almond and Stephen Genco, "Clouds, Clocks, and the Study of Politics," in *A Discipline Divided: Schools and Sects in Political Science*, ed. Almond (Newbury Park, Ca.: Sage, 1990), 32-65.
- Lee Drutman, "[Clouds, Clocks, and the Unexpected Rise of Donald Trump](#)," *Vox*, February 23, 2016.
- Jillian Schwedler, "Puzzle," *Qualitative & Multi-Method Research* (Fall 2013), 27-30.
- Adam Przeworski and Frank Salomon, "The Art of Writing Proposals" (1995).
- Malcom Gladwell, "[The Order of Things: What College Rankings Really Tell Us](#)," *New Yorker*, February 14 & 21, 2011.
- Jeffrey Knopf, "Doing a Literature Review," *PS: Political Science and Politics* (January 2006), 127-135.
- Nate Cohn, "[We Gave Four Good Pollsters the Same Raw Data. They Had Four Different Results](#)," *New York Times*, September 20, 2016.

Recommended Materials

None.

3. Teaching methodology

Lectures, discussion, response paper, library research project, problem sets, exams.

4. Course Schedule

Date	Class Agenda
Session 1 <i>Jan. 30</i>	<p>Topic: Welcome and Introduction: Why Research Methods Matter</p> <p>Description: Course syllabus review; policies, deadlines, requirements, and expectations; an introductory reflection on the essential role of methodology in defining the research subject.</p> <p>Reading:</p> <ul style="list-style-type: none"> • Karl R. Popper, <i>The Logic of Scientific Discovery</i> (Basic Books, 1959), 13-42. <p>Assignments/deadlines: none</p>
Session 2 <i>Feb. 6</i>	<p>Topic: Induction, Deduction, Verification, Falsification</p> <p>Description: Alternative ways of generating knowledge; why nothing can ever be conclusively verified; differences between religious and scientific knowledge.</p> <p>Reading:</p> <ul style="list-style-type: none"> • Popper, <i>Logic of Scientific Discovery</i>, 78-84, 251-54, 311-317. • Kuhn, <i>Structure of Scientific Revolutions</i>, chaps. 1-4. <p>Assignments/deadlines: none</p>
Session 3 <i>Feb. 13</i>	<p>Topic: Paradigms, Normal Science, and Scientific Revolutions</p>

	<p>Description: Different modes of scientific activity; the role of pathbreaking discoveries and scientific revolutions in defining a research agenda; scientific anomalies as triggers of paradigm shifts.</p> <p>Reading:</p> <ul style="list-style-type: none"> • Kuhn, <i>Structure of Scientific Revolutions</i>, chaps. 6-12. • Popper, <i>Logic of Scientific Discovery</i>, 44-48, 311-17. • Stephen Toulmin, "Does the Distinction between Normal and Revolutionary Science Hold Water?" and Karl R. Popper, "Normal Science and Its Dangers," in Imre Lakatos and Alan Musgrave, eds., <i>Criticism and the Growth of Knowledge</i> (Cambridge University Press, 1970), 39-58. <p>Assignments/deadlines: none</p>
<p>Session 4</p> <p>Feb. 20</p>	<p>Topic: From Natural to Political Science</p> <p>Description: The differences between natural and social/political science and their methodological implications; the role of the observer's goals and interests in shaping his/her IR knowledge.</p> <p>Reading:</p> <ul style="list-style-type: none"> • E.H. Carr, "The Science of International Politics," in <i>idem</i>, <i>The Twenty Years' Crisis, 1919-1939</i>, 2nd ed. (Harper & Row, 1946), vii-21. • Alasdair MacIntyre, "Is a Science of Comparative Politics Possible?" in <i>idem</i>, <i>Against the Self-Images of the Age</i> (Schocken, 1971), 260-79. • Gabriel Almond and Stephen Genco, "Clouds, Clocks, and the Study of Politics," in <i>A Discipline Divided: Schools and Sects in Political Science</i>, ed. Almond (Newbury Park, Ca.: Sage, 1990), 32-65. • Lee Drutman, "Clouds, Clocks, and the Unexpected Rise of Donald Trump," <i>Vox</i>, February 23, 2016. <p>Assignments/deadlines: Response paper due at the beginning of class.</p>
<p>Session 5</p> <p>Feb. 27</p>	<p>Topic: Framing a Research Puzzle: Concepts, Variables, Causal Chains</p> <p>Description: Attributes of a good research puzzle; the process of conceptualization; how to turn a research puzzle into a research question.</p> <p>Reading:</p> <ul style="list-style-type: none"> • Johnson et al., <i>Political Science Research Methods</i>, pp. 1-6, 74-82, and chaps. 2, 4 and 5. • Jillian Schwedler, "Puzzle," <i>Qualitative & Multi-Method Research</i> (Fall 2013), 27-30. • Adam Przeworski and Frank Salomon, "The Art of Writing Proposals" (1995). <p>Assignments/deadlines: none.</p>
<p>Session 6</p> <p>March 6</p>	<p>Topic: Literature Review and Data Collection</p> <p>Description: Literature review and its role in hypothesis formulation; library research and secondary literature mapping; the importance of iteration and revision in hypothesis formulation; data gathering techniques incl. polling, surveys, and interviews.</p>

	<p>Reading:</p> <ul style="list-style-type: none"> Johnson et al., <i>Political Science Research Methods</i>, chaps. 8 and 10, pp. 82-102, 338-344. Jeffrey Knopf, "Doing a Literature Review," <i>PS: Political Science and Politics</i> (January 2006), 127-135. Nate Cohn, "We Gave Four Good Pollsters the Same Raw Data. They Had Four Different Results," <i>New York Times</i>, September 20, 2016. <p>Assignments/deadlines: none</p>
Session 7 March 13	<p>Topic: Measurement, Hypothesis Formulation, and Criteria for Causality</p> <p>Description: Different ways of measuring phenomena; problems associated with quantifying events and occurrences in the human world.</p> <p>Reading:</p> <ul style="list-style-type: none"> Johnson et al., <i>Political Science Research Methods</i>, 104-121, 135-162, 166-79. Malcom Gladwell, "The Order of Things: What College Rankings Really Tell Us," <i>New Yorker</i>, February 14 & 21, 2011. <p>Assignments/deadlines: Library research and literature review project due at the beginning of class.</p>
Session 8 March 20	<p>Midterm Exam</p> <ul style="list-style-type: none"> in-class, comprehensive, closed-book start at 11:30, end at 12:45 (duration 75 minutes) combination of multiple choice and short answers to be completed by hand (exam booklets will be provided)
Session 9 March 27	<p>Topic: Descriptive Statistics: Measuring the Center and Variability</p> <p>Description: How to describe political phenomena using numbers; different kinds of variables; descriptions of central tendencies (mean, median, mode) and sample variability (stem-and-leaf, pie chart, histogram, dot plot, etc.).</p> <p>Reading:</p> <ul style="list-style-type: none"> Johnson et al., <i>Political Science Research Methods</i>, chap. 11. Devore and Peck, <i>Statistics</i>, 71-88, 93-94, 139-46, 151-54, 168-74. <p>Assignments/deadlines: none</p>
	<p>Mid-term break</p>
Session 10 Apr. 10	<p>Topic: From Description to Inference: Correlation and Linear Regression</p> <p>Description: Understanding univariate and bivariate datasets; identifying trends and patterns in bivariate datasets; using observed dataset patterns to make basic predictions.</p> <p>Reading:</p> <ul style="list-style-type: none"> Devore and Peck, <i>Statistics</i>, 113-14, 189-223. <p>Assignments/deadlines: none</p>
Session 11	<p>Topic: Probability and Population Distributions (incl. the Standard Normal)</p>

Apr. 17	<p>Description: The difference between samples and populations; probabilistic theory and its importance for making sample-based claims about populations; population distributions including the so-called Standard Normal (or Bell-Shaped) Distribution.</p> <p>Reading:</p> <ul style="list-style-type: none"> Devore and Peck, <i>Statistics</i>, 295-327. <p>Assignments/deadlines:</p> <ul style="list-style-type: none"> Statistics Problem Set I due in hard copy at the beginning of class.
Session 12 Apr. 24	<p>Topic: Point Estimation, Confidence Intervals, and Hypothesis Testing</p> <p>Description: Reliability of statistical inferences; how much confidence can we have in our sample-based predictions about populations; the relationship between prediction accuracy and prediction reliability; using inferential statistics to test basic hypotheses; defining the null and alternative hypothesis; hypothesis testing protocol and its possible outcomes.</p> <p>Reading:</p> <ul style="list-style-type: none"> Devore and Peck, <i>Statistics</i>, 369-71, 376-83, 389-94, 417-440. <p>Assignments/deadlines: none</p>
May 1	Holiday – Labor Day
May 8	Holiday – Liberation Day
Session 13 May 15	<p>Topic: Final Exam Prep and Review</p> <p>Description: Course material review and exam prep; exam cheat sheet composition; z- and t-tables use guidelines.</p> <p>Reading:</p> <ul style="list-style-type: none"> none <p>Assignments/deadlines: Statistics Problem Set II due in hard copy at the beginning of class.</p>
Session 14 May 19	<p>Final Exam</p> <ul style="list-style-type: none"> in-class, closed-book, comprehensive start at 11:30, end at 13:30 (duration 120 minutes) combination of multiple choice, short answers, and statistics problems to be completed by hand (exam booklets will be provided) <p>Assignments/deadlines: none</p>

5. Course Requirements and Assessment (with estimated workloads)

Assignment	Workload (hours)	Weight in Final Grade	Evaluated Course Specific Learning Outcomes	Evaluated Institutional Learning Outcomes*
Class Participation	42	5%	active reading, note taking, discussion and debate	1,2,3

Response Paper	8	10%	course material knowledge and application, critical thinking, academic writing skills, argumentation	1,2,3
Research Project	20	15%	active reading, research skills, critical thinking, writing skills, logical reasoning	1,2,3
Problem Sets	30	30%	course material knowledge and application, quantitative reasoning, statistical analysis	1,2,3
Midterm Exam	25	20%	course material knowledge and application, writing skills, critical thinking	1,2,3
Final Exam	25	20%	course material knowledge and application, quantitative reasoning, statistical analysis, writing skills, critical thinking	1,2,3
TOTAL	150	100%		

*1 = Critical Thinking; 2 = Effective Communication; 3 = Effective and Responsible Action

6. Detailed description of the assignments

Class participation

Students are expected to come to class prepared to actively engage with the day's topic. This means that they have completed all reading assignments and are ready to take lecture notes, pose clarifying questions to the lecturer, discuss the material with their classmates, and do sample exercises and problem sets.

Assessment breakdown

Assessed area	Percentage
Engagement in discussion	100%

Response paper

This paper is to be 3-4 pages long (A4, double-spaced, 12pt. font Times New Roman, 1" margins) and answer the following question: Is scientific progress possible? It is due in hard copy at the beginning of class on Friday, February 20, and must be informed by course readings covered up to that date. A backup copy is to be submitted electronically via NEO at the same time. Late submissions will not be accepted, and plagiarism and/or the use of generative AI are strictly prohibited.

Assessment breakdown

Assessed area	Percentage
Course readings knowledge and application	35%
Essay writing skills	30%
Critical thinking and argumentation	35%

Research project

For this project each student will be paired up with a classmate and complete it together. The project will involve library research and literature review. The assignment will be distributed on Friday, February 20, and the completed project is due at the beginning of class on Friday, March 13. Late submissions will not be accepted.

Assessment breakdown

Assessed area	Percentage
Library research skills	40%
Writing skills	20%
Active reading skills	20%
Critical thinking and argumentation	20%

Midterm Exam

Students will take a midterm exam. It will be in-class, closed-book, and completed by hand (exam booklets will be provided). The midterm exam will take place on Friday, March 20, 11:30-12:45.

Assessment breakdown

Assessed area	Percentage
Knowledge of course material	30%
Critical thinking	30%
Writing skills	15%
Time management skills	15%

Final Exam

Students will also take a final exam. It will be in-class, closed-book, comprehensive, and completed by hand (exam booklets will be provided). The final exam will take place on Tuesday, May 19, 11:30-13:30.

Assessment breakdown

Assessed area	Percentage
Knowledge of course material	30%
Critical thinking	30%
Writing skills	15%
Time management skills	15%

Problem Sets

Two take-home problem sets will be assigned. They will consist of descriptive and inferential statistics exercises designed to augment lecture material. The first problem set will be handed out on Friday, March 27, and due in hard copy at the start of class on Friday, April 17. The second one will be handed out on Friday, April 24, and due in hard copy at the start of class on Friday, May 15. You are required to complete them individually and without any help other than course materials (readings, lecture notes). Late submissions will not be accepted.

Assessment breakdown

Assessed area	Percentage
Knowledge of course material	30%
Statistical analysis	25%
Critical thinking	25%
Writing and presentation skills	20%

7. General Requirements and School Policies

General requirements

All coursework is governed by AAU's academic rules. Students are expected to be familiar with the academic rules in the Academic Codex and Student Handbook and to maintain the highest standards of honesty and academic integrity in their work.

Electronic communication and submission

The university and instructors shall only use students' university email address for communication, with additional communication via NEO LMS or Microsoft Teams. Students sending e-mail to an instructor shall clearly state the course code and the topic in the subject heading, for example, "COM101-1 Mid-term Exam. Question". All electronic submissions are through NEO LMS. No substantial pieces of writing (especially take-home exams and essays) can be submitted outside of NEO LMS.

Attendance

Attendance, i.e., presence in class in real-time, at AAU courses is default mandatory; however, it is not graded as such. (Grades may be impacted by missed assignments or lack of participation.) Still, students must attend at least two thirds of classes to complete the course. If they do not meet this condition and most of their absences are excused, they will be administratively withdrawn from the course. If they do not meet this condition and most of their absences are not excused, they will receive a grade of "FW" (Failure to Withdraw). Students may also be marked absent if they miss a significant part of a class (for example by arriving late or leaving early).

Absence excuse and make-up options

Should a student be absent from classes for relevant reasons (illness, serious family matters), and the student wishes to request that the absence be excused, the student should submit an Absence Excuse Request Form supplemented with documents providing reasons for the absence to the Dean of Students within one week of the absence. Each student may excuse up to two sick days per term without any supporting documentation; however, an Absence Excuse Request Form must still be submitted for these instances. If possible, it is recommended the instructor be informed of the absence in advance. Should a student be absent during the add/drop period due to a change in registration this will be an excused absence if s/he submits an Absence Excuse Request Form along with the finalized add/drop form.

Students whose absence has been excused by the Dean of Students are entitled to make up assignments and exams provided their nature allows. Assignments missed due to unexcused absences which cannot be made up, may result in a decreased or failing grade as specified in the syllabus.

Students are responsible for contacting their instructor within one week of the date the absence was excused to arrange for make-up options.

Late work: No late submissions will be accepted – please follow the deadlines.

Electronic devices

Electronic devices (e.g. phones, tablets, laptops) may be used only for class-related activities (taking notes, looking up related information, etc.). Any other use will result in the student being marked absent and/or being expelled from the class. No electronic devices may be used during tests or exams unless required by the exam format and the instructor.

Eating is not allowed during classes.

Cheating and disruptive behavior

If a student engages in disruptive conduct unsuitable for a classroom environment, the instructor may require the student to withdraw from the room for the duration of the class and shall report the behavior to the student's Dean.

Students engaging in behavior which is suggestive of cheating will, at a minimum, be warned. In the case of continued misconduct, the student will fail the exam or assignment and be expelled from the exam or class.

Plagiarism

Plagiarism obscures the authorship of a work or the degree of its originality. Students are expected to create and submit works of which they are the author. Plagiarism can apply to all works of authorship – verbal, audiovisual, visual, computer programs, etc. Examples are:

- **Verbatim plagiarism:** verbatim use of another's work or part of it without proper acknowledgement of the source and designation as a verbatim quotation,
- **Paraphrasing plagiarism:** paraphrasing someone else's work or part of it without proper acknowledgement of the source,
- **Data plagiarism:** use of other people's data without proper acknowledgement of the source,
- **False quotation:** publishing a text that is not a verbatim quotation as a verbatim quotation,
- **Fictitious citation:** quoting, paraphrasing, or referring to an incorrect or a non-existent work,
- **Inaccurate citation:** citing sources in such a way that they cannot be found and verified,
- **Ghostwriting:** commissioning work from others and passing it off as one's own,
- **Patchwriting:** using someone else's work or works (albeit with proper acknowledgement of sources and proper attribution) to such an extent that the output contains almost no original contribution,
- **Self-plagiarism:** unacknowledged reuse of one's own work (or part of it) that has been produced or submitted as part of another course of study or that has been published in the past,
- **Collaborative plagiarism:** delivering the result of collective collaboration as one's own individual output.

At minimum, plagiarism will result in a failing grade for the assignment and shall be reported to the student's Dean. A mitigating circumstance may be the case of novice students, and the benefit of the doubt may be given if it is reasonable to assume that the small-scale plagiarism was the result of ignorance rather than intent. An aggravating circumstance in plagiarism is an act intended to make the plagiarism more difficult to detect. Such conduct includes, for example, the additional modification of individual words or phrases, the creation of typos, the use of machine translation tools or the creation of synonymous text, etc. The Dean may initiate a disciplinary procedure pursuant to the Academic Codex. Intentional or repeated plagiarism always entail disciplinary hearing and may result in expulsion from AAU.

Use of Artificial Intelligence and Academic Tutoring Center

The use of artificial intelligence tools to search sources, to process, analyze and summarize data, and to provide suggestions or feedback in order to improve content, structure, or style, defined here as AI-assisted writing, is not in itself plagiarism. However, it is plagiarism if, as a result, it obscures the authorship of the work produced or the degree of its originality (see the examples above).

AAU acknowledges prudent and honest use of AI-assisted writing, that is, the use of AI for orientation, consultation, and practice is allowed. For some courses and assignments, however, the use of AI is counterproductive to learning outcomes; therefore, the course syllabus may prohibit AI assistance.

A work (text, image, video, sound, code, etc.) generated by artificial intelligence based on a mass of existing data, defined here as AI-generated work, is not considered a work of authorship. Therefore, if an AI-generated work (e.g. text) is part of the author’s work, it must be marked as AI-generated. Otherwise, it obscures the authorship and/or the degree of originality, and thus constitutes plagiarism. Unless explicitly permitted by the instructor, submission of AI-generated work is prohibited.

If unsure about technical aspects of writing, and to improve their academic writing, students are encouraged to consult with the tutors of the AAU Academic Tutoring Center. For more information and/or to book a tutor, please contact the ATC at:

<http://atc.simplybook.me/sheduler/manage/event/1/>.

Course accessibility and inclusion

Students with disabilities should contact the Dean of Students to discuss reasonable accommodations. Academic accommodations are not retroactive.

Students who will be absent from course activities due to religious holidays may seek reasonable accommodations by contacting the Dean of Students in writing within the first two weeks of the term. All requests must include specific dates for which the student requests accommodations.

8. Grading Scale

Letter Grade	Percentage*	Description
A	95–100	Excellent performance. The student has shown originality and displayed an exceptional grasp of the material and a deep analytical understanding of the subject.
A–	90–94	
B+	87–89	Good performance. The student has mastered the material, understands the subject well and has shown some originality of thought and/or considerable effort.
B	83–86	
B–	80–82	
C+	77–79	Fair performance. The student has acquired an acceptable understanding of the material and essential subject matter of the course, but has not succeeded in translating this understanding into consistently creative or original work.
C	73–76	
C–	70–72	
D+	65–69	Poor. The student has shown some understanding of the material and subject matter covered during the course. The student’s work, however, has not shown enough effort or understanding to allow for a passing grade in School Required Courses. It does qualify as a passing mark for the General College Courses and Electives.
D	60–64	
F	0–59	Fail. The student has not succeeded in mastering the subject matter covered in the course.

* Decimals should be rounded to the nearest whole number.

Prepared by: Milan Babík

Date: January 12, 2026

Approved by: Dr William F. Eddleston, Chair of IR

Date: 16/1/26