Writing Research with AI

A Crash Course on AI Tools for Research

Course Overview

Title	Writing Research with AI: A Crash Course on English Academic Writing and Social Research Methods in an AI-Augmented Workflow
Format	10 lessons of 1.5 hours each (15 hours total of in-class instruction)
Language of instruction	English
Final output	A literature review on a research question of your choice, plus a complete annotated bibliography. The final product is produced through a documented, AI-augmented workflow that you can explain and defend.
Core competencies	Using AI tools to support, rather than replace, research thinking; building bibliographies and annotated bibliographies with AI assistance; writing a research thesis you can discuss with confidence; designing questionnaires for surveys, interviews, and focus groups; recognizing the building blocks of a research project; writing in academic English with effective style and voice while avoiding the patterns of "AI voice."
AI tools used	General-purpose chat assistants such as Claude, ChatGPT, and Gemini; academic search tools such as Elicit, Consensus, and Google Scholar; reference managers with AI features such as Zotero; writing assistants such as Grammarly; transcription tools for interviews. Free versions of these tools are sufficient for the course.
Topic selection	You choose your own topic in Lesson 1 and develop it across all 10 lessons.

What You Will Walk Away With

By the end of this course, you will be able to:

- Use AI tools as a research partner that you supervise.
- Build proper citations and bibliographies with AI assistance, and identify the citations that AI tools fabricate.
- Formulate a clear, arguable research thesis that you can speak on with confidence.
- Write a purposeful literature review, using AI for targeted support.
- Determine when to use quantitative, qualitative, primary, and secondary research.
- Design a questionnaire for a survey, interview, or focus group.
- Name the building blocks of a complete research project.

- Write academically in your own voice, recognize the markers of "AI voice," and edit them out.
- Evaluate sources critically.
- Document your AI use transparently, in line with academic integrity norms.

The Course Arc

Lessons 1–2	Foundations: what research is, how AI tools actually work, and how to find useful sources without being misled by AI summaries.
Lessons 3–4	Reading sources closely (the work AI cannot do for you), then learning to cite them. Includes methods for catching AI-fabricated citations.
Lessons 5–6	Building a bibliography using reference-manager AI features, then developing it into an annotated bibliography written in your own voice.
Lesson 7	Academic writing in English: developing your voice, recognizing the patterns of "AI voice," and using AI as an effective writing tool.
Lesson 8	Designing questionnaires for surveys, interviews, and focus groups, using AI to pressure-test draft instruments.
Lesson 9	Thesis, structure, and the anatomy of a full research project, with AI used as a thinking partner.
Lesson 10	Drafting, revising, peer review (human and AI), and completing the literature review.

Lesson Plans

Each lesson runs 1.5 hours and produces a deliverable that adds to your final project. Every lesson includes hands-on work with AI tools matched to that lesson's research task.

LESSON 01. What is research, and what is AI?

Foundations of academic research, its main types, and what large language models can and cannot do

AI focus this lesson

Set up your AI toolkit (one general-purpose chat assistant and one academic search tool) and review what these tools actually do.

Topics covered

- The anatomy of a complete research project: question, literature, methodology, findings, conclusion.
- Types of research: quantitative compared with qualitative; mixed methods.
- Primary compared with secondary research.

- An introduction to common methodologies: surveys, interviews, focus groups, ethnography, case studies, content analysis, experiments, historical and archival work.
- The research cycle: moving from initial curiosity to a defensible research question.
- What AI tools actually do: a plain-language overview of large language models and retrieval-augmented search, and why "the AI told me" is not a citation.
- Choosing your course topic, and using an AI assistant to interrogate and refine it rather than to generate it.
- English vocabulary theme: language for the parts of a research project (e.g. epistemology, paradigm, methodology, rationale) and language for distinguishing different kinds of research (e.g. empirical, longitudinal, ethnographic, exploratory).

Lesson deliverable: **Topic proposal: a working research question**

LESSON 02. Finding and evaluating sources

Source literacy, critical reading, and the AI tools that locate sources (and the ones that fabricate them)

AI focus this lesson

Use AI tools to identify sources, interrogate them, and develop good habits for checking and evaluating sources.

Topics covered

- Types of sources: academic, journalistic, institutional, and grey literature, and which categories warrant trust.
- The CRAAP test: Currency, Relevance, Authority, Accuracy, Purpose.
- Boolean search operators and effective use of academic databases.
- AI-powered academic search tools (Elicit, Consensus, Scopus AI, Google Scholar): what they do well, what they miss, and how to verify each result.
- Why general chat assistants invent papers, authors, and DOIs, and how to recognize this consistently.
- Identifying primary and secondary sources in your field.
- English vocabulary theme: language for different kinds of sources (e.g. peer-reviewed, scholarly, grey literature, monograph) and language for judging their quality (e.g. authoritative, tendentious, partisan, substantiated).

Lesson deliverable: **A list of at least 5 verified sources on your topic**

LESSON 03. Reading and annotating like a researcher

Comprehension, annotation, and using AI as a reading aid without delegating the reading

AI focus this lesson

Use an AI assistant to summarize a paper you have already read closely. Compare what the AI captured with what you identified as important.

Topics covered

- Active reading strategies: purposeful annotation and highlighting.
- Identifying the main argument, the evidence, the theoretical framework, and the limitations the author acknowledges.
- Using AI to clarify a difficult paragraph: requesting a plain-language paraphrase of a dense passage, then checking it against the original.
- Why AI summaries of full papers flatten the argument. The difference between "summarize this" and "explain the part about X."
- Note-taking that supports later writing: Cornell notes, synthesis matrices, concept maps. How AI can help populate a synthesis matrix after you have done the reading.
- Paraphrasing compared with quoting: when to use your own words and when to quote directly. Why pasting AI-paraphrased text without rereading the source is a form of plagiarism.
- English vocabulary theme: language for the sections of a research article (e.g. abstract, findings, discussion, limitations) and language for what you do as a reader (e.g. annotate, paraphrase, gloss, scrutinize).

Lesson deliverable: Annotated reading notes on two of your sources

LESSON 04. Citation fundamentals and AI-generated citations

Academic integrity, citation styles, and the verification required for every AI-suggested reference

AI focus this lesson

Run a structured exercise: ask a chat assistant for ten sources on your topic in proper citation format, then verify each one. Track which sources exist, which are real but incorrectly cited (wrong author, year, or journal), and which are entirely fabricated.

Topics covered

- Why citation matters: integrity, intellectual honesty, and the prevention of plagiarism.
- A review of the major citation styles (APA, MLA, Chicago) and the contexts in which each is used.
- The anatomy of a citation: author, date, title, publisher, DOI or URL.
- In-text citations compared with reference lists and works cited.
- Using AI to format and check citations when it has the real source available, compared with asking AI to generate citations from memory. The first is reliable; the second is not.
- Verifying every AI-suggested citation: the DOI check, the journal lookup, and the author affiliation cross-reference.
- Disclosing AI use: emerging norms in academic integrity policies and how to document your AI workflow honestly.

- English vocabulary theme: language for using sources (e.g. paraphrase, attribute, acknowledge, appropriate) and language for academic integrity concepts (e.g. attribution, fabrication, integrity, originality).

Lesson deliverable: Your verified sources correctly formatted in your chosen citation style

LESSON 05. Building a bibliography

Organizing and documenting your sources, with reference managers and their AI features

AI focus this lesson

Set up Zotero (or an equivalent) and connect it to your browser.

Topics covered

- Bibliography, works cited, and reference list: the distinctions among them.
- Formatting citations for books, journal articles, websites, and reports.
- Alphabetization, hanging indents, and the smaller formatting rules.
- Zotero and AI-assisted features (auto-fill, tagging, retrieval, library-grounded chat).
- Why a Zotero library is a more reliable AI research partner than a chat assistant's memory: it is grounded in your real sources rather than in fabrications.
- English vocabulary theme: language for the components of a citation entry (e.g. DOI, edition, imprint, pagination) and language for the different reference list formats (e.g. bibliography, works cited, footnote, endnote).

Lesson deliverable: A complete, correctly formatted bibliography of every source you have gathered so far, exported from a reference manager.

LESSON 06. Writing an annotated bibliography

Responding to one source at a time: description, evaluation, and relevance

AI focus this lesson

Draft one annotation entirely on your own. Draft a second with AI assistance: ask the tool for a summary of the source's argument, then edit heavily. Compare the two.

Topics covered

- What an annotation is and what it is not. An annotation responds to one source at a time, not to the whole research conversation.
- Three types of annotation: descriptive (what the source says), evaluative (how well it argues), and analytical (why it matters to your project).
- Three-part annotation structure: (1) a tight summary of the argument and scope, (2) a critical examination of methodology, evidence, and limitations, (3) a clear note on relevance to your project.

- Where AI helps: tightening a wordy summary, suggesting evaluative angles you missed, and identifying places where you have drifted into your own opinion.
- Where AI consistently fails: writing the "why it matters to you" section, because it does not know your project, your argument, or your context.
- Writing about a source's argument fairly in English without inserting your own opinion. This is a pattern AI assistants tend to violate at scale.
- English vocabulary theme: language for the parts of an argument (e.g. claim, premise, contention, caveat) and language for evaluating it (e.g. compelling, tenuous, robust, nuanced).

Lesson deliverable: 5 complete annotated bibliography entries

LESSON 07. Academic voice and the patterns of AI voice

Developing register and tone, recognizing the markers of AI-generated prose, and using writing assistants effectively

AI focus this lesson

This lesson involves the most direct work with writing assistants. We examine the linguistic signature of AI-generated text and practice editing AI-assisted drafts into recognizably human academic prose.

Topics covered

- What academic English is: formal register, hedging, objectivity, and precision.
- Hedging language used well: "it appears that," "evidence suggests," "may indicate," "it could be argued."
- Developing your voice: when to be formal and when to be more relaxed.
- Using AI writing tools effectively. They help with brainstorming, outlining, grammar checks, sentence-level clarity, and transitions. They do not help when used to produce work that is not yours, or that does not sound like you.
- Recognizing AI voice. Common markers include over-hedged phrasing, hollow openers such as "in today's world" or "it is important to note," heavy use of em-dashes and parallel triplets, and uniformly polished sentences. Readers identify these patterns quickly.
- The edit-down workflow: drafting with AI, then deliberately removing AI markers, varying sentence length, and revising for your own voice.
- Sentence variety: simple, compound, and complex sentences used together, and avoidance of passive voice where it weakens the writing.
- Documenting AI use in your writing process: what to disclose, and how.
- English vocabulary theme: language for register and tone (e.g. formal, hedged, tentative, objective) and language for the grammatical features that shape style (e.g. nominalization, cohesion, syntax, diction).

Lesson deliverable: Choose an academic source you find well-written and analyze what its writing voice is doing.

LESSON 08. Questionnaire design

Designing surveys, interview guides, and focus group protocols, and testing them with AI

AI focus this lesson

Once you have a draft questionnaire, AI is useful for review and checking the logic of the instrument.

Topics covered

- When to use each method: surveys for breadth, interviews for depth, focus groups for interaction between participants.
- Moving from research question to instrument: translating a broad curiosity into questions a respondent can answer.
- Question types and when to use them: closed compared with open-ended, multiple choice, ranking, and demographic items.
- Common problems to avoid: leading questions, double-barreled questions, loaded language, and assumption-heavy phrasing.
- Question order, flow, and pacing: opening questions, building rapport, and placement of sensitive items.
- Writing semi-structured interview guides and focus group protocols, including effective follow-up probes.
- Using AI for instrument review. Useful prompts include: “act as a skeptical reviewer of this survey,” “respond as a respondent who would find this question difficult,” and “what assumptions am I making in question 4?”
- Using AI for transcription (Otter, Whisper, Descript) when fielding interviews, with attention to consent and confidentiality.
- Research ethics: informed consent, confidentiality, and the principle of asking only what you need. This includes the ethical questions raised by feeding interview transcripts to AI tools.
- English vocabulary theme: language for the parts of a questionnaire (e.g. item, prompt, probe, vignette), language for problematic questions (e.g. leading, double-barreled, loaded), and language for research ethics (e.g. consent, anonymity, confidentiality, debriefing).

Lesson deliverable: Identify an instrument your research would use, and design a draft.

LESSON 09. Thesis, structure, and putting sources in conversation

Argument, synthesis, and the components of a research project

AI focus this lesson

Synthesis is the task at which AI tools are most appealing and least reliable. We practice using AI as a thinking partner (“where do my sources disagree?”, “what is the strongest counter to my thesis?”, “group these into themes”) and then conduct the synthesis ourselves.

Topics covered

- What a literature review is and what it is not. It is not a list of book reports, and it is not an AI-generated synthesis of titles fed to a chat assistant.
- Writing a thesis statement that is clear, arguable, and grounded in your sources. Using AI to stress-test it through prompts such as “argue against this thesis” or “what is ambiguous here?”
- The standard sections of a complete research project: introduction, literature review, methodology, discussion, conclusion, bibliography.
- Synthesis compared with summary: placing sources in conversation with one another rather than presenting them sequentially.
- Mapping where your sources agree, disagree, complement, or build on one another. Using AI to help cluster themes after you have read the sources.
- Why AI-generated synthesis is often inaccurate: it conflates sources, invents agreements, and smooths over the disagreements that should be central to your review.
- Writing synthesis paragraphs grouped by theme or debate, with signal phrases and accurate in-text citations.
- Organizing the literature review body by theme, debate, or chronology.
- PEEL paragraph structure (Point, Evidence, Explain, Link) and effective transitions.
- English vocabulary theme: language for how sources relate to each other (e.g. corroborate, refute, complement, problematize) and signal-phrase language for introducing and contrasting them (e.g. building on, in contrast, conversely, furthermore).

Lesson deliverable: A literature review outline with a working thesis and identifiable themes

LESSON 10. Final draft and revision

Drafting, revising, and peer review (human and AI)

AI focus this lesson

AI tools serve as a first-pass editor: catching typos, checking citation consistency, flagging unclear sentences, and suggesting tighter phrasing. Peer review with classmates remains essential. Human readers identify what AI tools cannot.

Topics covered

- Drafting and revising the literature review: introduction, themed body sections, conclusion.
- Proofreading for citation accuracy and consistency, with AI as a line-editor and you as the final judge.
- Peer review: giving and receiving constructive academic feedback, human to human.
- Using AI for peer review effectively: providing your own draft and requesting specific kinds of feedback (“where is my argument weakest?”, “which sentences are unclear?”) rather than asking the tool to “make this better.”
- Final AI use disclosure: a one-page log of where and how AI assisted across all ten lessons, of the kind appropriate for documentation to a supervisor or journal.

- Locating your literature review within the larger research project: what precedes it, and what would follow.

Lesson deliverable: Final submission: a brief literature review, complete annotated bibliography, bibliography, and AI use log documenting your workflow across the course.