Course Code	HP3102
Course Title	Methods in Research Synthesis
Pre-requisites	HP1000 Introduction to Psychology and HP1100 Fundamentals of Social Science Research or CS2008 Fundamentals of Research and one of the following list 2000-level courses HP2300 Developmental Psychology or HP2400 Social Psychology or HP2500 Personality and Individual Differences or HP2600 Cognitive Psychology or HP2700 Abnormal Psychology
No of AUs	3

Course Aims

This course equips you with the knowledge and skills to systematically synthesise existing research to address focused questions in psychology and the social sciences. You will learn how to formulate well-structured research questions, design and execute reproducible literature searches across multiple academic databases, and critically select relevant evidence from both academic and grey literature. Through hands-on training, you will gain proficiency in using industry-standard tools such as Zotero, Rayyan, and Covidence to manage references, document screening decisions, and extract and organise data for synthesis. The course is particularly suited for students preparing to undertake an honours thesis, pursue postgraduate studies, or work in research-driven environments where rigorous evidence appraisal and synthesis are essential. Step-by-step guidance and scaffolded practice will enable you to develop methodological competence and analytical insight, producing work aligned with international standards for transparency and reproducibility. By the end of the course, you will possess transferable research skills valued in academia, policy analysis, consultancy, and professional practice, and be prepared to contribute meaningfully to evidence-informed decision-making in your chosen field.

Intended Learning Outcomes (ILO)

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

1. Formulate clear, focused, and analytically meaningful research questions for research synthesis using recognised frameworks such as PICO or SPIDER, and justify the selection of an appropriate review type (systematic, scoping, or meta-analytic).

2. Design, execute, and document reproducible literature search strategies across multiple academic databases, demonstrating appropriate use of keywords, controlled vocabularies, Boolean logic, and search translation techniques.

3. Critically evaluate, select, and justify the inclusion of academic and grey literature using explicit eligibility criteria and quality or risk of bias considerations relevant to the review question.

4. Apply reference management and systematic review software tools (e.g., Zotero, Rayyan, Covidence) to manage citations, conduct screening procedures, extract data, and maintain transparent records of review decisions.

5. Produce a structured research synthesis report that adheres to PRISMA guidelines, clearly communicates methods and findings, and demonstrates analytical depth, transparency, and critical reflection on limitations and evidence quality.

Course Content

1. Introduction to research synthesis: types and purposes
2. Framing research questions: PICO, SPIDER, and other frameworks
3. Scoping reviews vs. systematic reviews vs. meta-analyses
4. Developing inclusion and exclusion criteria
5. Identifying relevant databases and grey literature sources
6. Search strategies: Boolean logic, truncation, MeSH terms
7. Translating search strings across multiple platforms
8. Reference management with Zotero and EndNote
9. Screening and study selection using Covidence
10. Data extraction and charting
11. Assessing quality and risk of bias
12. Reporting using PRISMA guidelines
13. Writing a structured synthesis report

Assessment (includes both continuous and summative assessment)

Component	ILO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/ Individual
CA1. Search Strategy Portfolio – develop and submit database search strings with translation across two platforms)	2, 3	Competence, Cognitive Agility	25%	Individual
CA2. Software Skills Report – reflection and screenshots of using tools (Zotero, Rayyan, Covidence)	4	Competence	25%	Individual
CA3. Peer Feedback Assignment	1, 4, 5	Character, Collaboration	10%	Individual
CA4. Final Systematic Review Report – 2,000-word write-up	1, 2,3, 4, 5	Competence, Character, Cognitive Agility	40%	Individual

following PRISMA format)				
Total			100%	

Formative feedback

You will receive ongoing formative feedback throughout the course in both written and verbal formats. For Continuous Assessments (CA1 and CA2), detailed written comments will be provided on your search strategies and software documentation, highlighting strengths and areas for improvement. During in-class workshops, verbal feedback will be offered during peer review activities and search strategy labs to help you refine your work before final submission. Peer feedback exercises (CA3) will also include instructor observations to guide your critical appraisal skills. You are encouraged to approach your instructor for one-on-one consultations at any point for clarification or further support. Summative feedback will be provided after the final report is submitted to help you consolidate your learning and prepare for future research work.

Learning and Teaching approach

Approach	How does this approach support you in achieving the learning outcomes.
Flipped classroom	You will review key concepts (e.g., PICO/SPIDER frameworks, search syntax) before class so that in-person sessions can be used for applied practice and peer discussion, helping you build deeper understanding.
Guided hands-on workshops	These sessions provide step-by-step instruction and practice with databases, reference tools, and review software, enabling you to confidently apply technical skills aligned with ILOs 2–4.
Peer review and collaboration	Working with peers to evaluate and justify review decisions enhances your critical reasoning, strengthens communication skills, and reinforces concepts related to ILOs 1, 3, and 5.
Scenario-based activities	Realistic tasks such as search translation challenges and study selection simulations provide context-rich learning that supports the transfer of knowledge to novel research problems (ILO 5).
Project-based learning	Completing a mini systematic review as a term-long assignment allows you to synthesise all course elements and demonstrate competence in each stage of the review process, directly supporting all ILOs.

Reading and References

- Booth, A., Sutton, A., Clowes, M., & Martyn-St James, M. (2021). Systematic Approaches to a Successful Literature Review (3rd ed.). Sage.
- Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z,(Eds) (2024). JBI Manual for Evidence Synthesis. JBI, https://synthesismanual.jbi.global;
- Page M J, McKenzie J E, Bossuyt P M, Boutron I, Hoffmann T C, Mulrow C D et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ; 372, n71. doi:10.1136/bmj.n71
- Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors) (2024). Cochrane Handbook for Systematic Reviews of Interventions version 6.5. Cochrane,. www.cochrane.org/handbook.
- Tricco, Andrea C., Langlois, Etienne. V., Straus, Sharon E., Alliance for Health Policy and Systems Research & World Health Organization. (2019). Rapid reviews to strengthen health policy and systems: a practical guide. World Health Organization.

NB: The above listing comprises the foundational readings for the course and more up-to-date relevant readings will be provided when they become available.

Course Policies and Student Responsibilities

Students are expected to complete all assigned class readings and activities, attend classes punctually and complete all scheduled assignments and quiz by due dates. Students are expected to take responsibility to follow up with course notes, assignments, and course related announcements for classes they have missed. Participation is expected in all discussions and activities. No make-up quiz or extension will be given without a signed letter from a doctor or head of a university-sponsored extra-curricular program documenting illness. All missed quizzes and assignments will have a zero grade. As Psychology students, the guidelines of the American Psychological Association on referencing and citation are expected to be followed (see APA Publication Manual, 7th Edition).

Academic Integrity

Originality of work and appropriate acknowledgement of reference source are extremely important in the academic context. See here for the details:

https://ntulearn.ntu.edu.sg/bbcswebdav/courses/AI0001-Master/m/index.htm

As a psychology student, you are expected to follow the guidelines of the American Psychological Association on referencing and citation (see APA Publication Manual, 7th Edition).

As a student of NTU, you are expected to uphold the Honor Code against plagiarism and collusion. Plagiarism and collusion are defined as the following in the Honor Code:

Plagiarism: "To use or pass off as one's own, the writings or ideas of another, without acknowledging or crediting the source from which the ideas are taken."

Collusion: "Submitting an assignment, project or report completed by another person and passing it off as one's own; Preparing an assignment, project or report for a fellow student who submits the work as his or her own."

Committing plagiarism and/or collusion in this course warrants serious penalty, see here for more details:

http://www.sss.ntu.edu.sg/Programmes/Undergraduate/CurrentStudents/Pages/Plagiarism.aspx

Planned Weekly Schedule

Week	Topic	Course LO	Readings/ Activities
1	Introduction to research synthesis and review types	1	Lecture + discussion
2	Framing research questions (PICO, SPIDER)	1	Workshop
3	Inclusion and exclusion criteria	1, 3	Group activity
4	Selecting databases & understanding coverage	2	Hands-on exploration
5	Boolean operators, truncation, MeSH terms	2	Guided practice
6	Translating search strategies across databases	2, 3	Lab-based task
7	Grey literature and supplementary sources	3	Class discussion
8	Reference management: Zotero, EndNote	4	Software demo
9	Screening and selection using Rayyan/Covidence	4	In-class simulation
10	Data extraction and synthesis	4, 5	Applied task
11	Writing and reporting with PRISMA	5	Writing workshop
12	Peer feedback and revision	1–5	Peer review activity
13	Wrap-up: ethical issues, transparency, and reflection	5	Reflective discussion