Cognitive Psychology in Context

Master's Program

2024-2025 GRADUATE PROGRAM HANDBOOK

Contents

KEY PROGRAM PERSONNEL

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DEGREE REQUIREMENTS AND COURSEWORK

Completion of the Cognitive Psychology in Context MS program requires (1) 36 total credit hours, 24 of which must be didactic; (2) successful completion of either a thesis or a capstone project; (3) satisfactory grades in each course and an overall average of B (3.00) or higher.

To satisfy the program research requirements, all first-year students must take PSY-PC 7951, Research Practicum in Cognitive Psychology I, and PSY-PC 7952, Research Practicum in Cognitive Psychology II. Students' first-year research progress in their assigned labs will be evaluated and recorded via that class. On the second year, students must register for a section of PSY-GS 7999 with their advisor in order to have their research/capstone credit recorded.

Students typically complete the degree in 24 months – 4 semesters across the two years on the program. However, it is possible to complete the degree in 18 months by taking classes and research credit in the summer following the 1st year on the program.

Criminal History Background Clearance.

Students in the CPC program, along with all other Peabody students, faculty, and staff, are required to complete a background clearance. Students who will be working with minors must undergo the fingerprinting option of the background check, while those whose research does not involve interacting with minors can choose the non-fingerprinting version. You should consult your faculty advisor to determine which option is appropriate for you. Information and instructions for the background check can be found here.

Responsible Conduct of Research (RCR)

As part of the degree requirements established by the Graduate School, all new graduate students are required to complete *Responsible Conduct of Research training.* CPC MS students must take the CITI (Collaborative Institutional Training Initiative) RCR course for Social and Behavioral Sciences (Group 2) and should submit both the electronic certificate and completion report to Ally Jacobs. Certificates sent to Ally Jacobs from students' Vanderbilt email address are automatically linked to their degree audit.

Students whose research projects involve human subjects are required to complete the appropriate *Institutional Review Board (IRB) training* based on the type of research they will be doing, prior to conducting any research. Students should consult with their research supervisor (PI) about which training is appropriate, and when the training is complete, they should submit their certificate and report to their lab PI upon completion.

Students assigned to the labs that work with children should also complete the *Protection for Minors course* available through Oracle Learning. Access to Oracle Learning requires an employment profile set up. For this reason, students can only start working on this training module once they arrive at Vanderbilt. PoM instructions.

EDUC 5100

This course is offered in the Fall semester and is required only for international students who obtained their degrees outside of the U.S. For new professional international students to Peabody College, navigating the academic requirements and social expectations can be much different than their previous experiences. This course provides an overview of contextualized concepts about the

U.S. education history, social context, and policies. It also introduces organizational and interpersonal communication tools specific to the students' new learning environment.

Activities in this 10-module course are designed to help students:

- Identify and leverage resources to support professional growth through and beyond Peabody College
- Understand relevant terminology, policies, and organizational structures
- Learn to productively and professionally interact with faculty, peers, and others
- Establish intellectual and social communities and professional networks

Instructors:

- Yu (Wendy) Wu, M.Ed., Assistant Director, Peabody Office of Student Life
- Meaghan Mundy, Ph.D., Associate Dean of Students

Class meeting time: Fridays, 10:00-11:15 a.m.

If you are an international student and believe you may be exempt from this course or if this course has a scheduling conflict with your core Cognitive Psychology classes required for the degree please contact the program director.

Core Cognitive Psychology Courses (9 credit hours)

PSY-GS 8360 Human Cognition (3)
PSY-GS 8470 Cognitive Science to the Classroom (3)
PSY-PC 7500 Special Topics Psych and HD (3)
**Other options:*
PSY-PC 7160 Bilingualism and Second Language Learning
PSY-PC 7850 Research Methods Dev Psych
PSY-PC 8340 Cognitive Development
PSY-GS 8350 Individual Differences
PSY-GS 8430 Advanced seminar: Cognitive Studies – Perspective-Taking in Communication (topics vary)
PSY-PC 6460 Brain, Development and Cognition
PSY-GS 8450 Seminar in Cognitive Development

Quantitative Methods (6 credit hours)

PSY-GS 8858 Introduction to Statistical Inference (3)
PSY-GS 8870 Correlation and Regression (3)
**Other options:*
PSY-GS 8861 Statistical Inference
PSY-GS-8882 Multilevel Modeling
PSY-GS-8850 / PSY-PC-3749 Applied Nonparametric Statistics
PSY-GS 8864 Analysis and Design of Experiment
PSY-GS 8867 Multivariate Statistics
PSY-GS 8878/7878 Statistical Consulting
PSY-GS 8350-01 / PSY-PC 7500-07 Individual Differences

PSY-GS 8880/8881 Item Response Theory I/II
PSY-GS 8850 Applied Bayesian Analysis for Latent Variable Modeling
PSY 8218 Computational Modeling
PSY 8120 Categorical Data Analysis
PSY 8305 Linear and Nonlinear Mixed Effects Models
PSY 6220 Bayesian Modeling with Python
PSY-GS 8873 Structural Equation Modeling
PSY-GS 8751 Exploratory Data Analysis
PSY-GS 8875 Behavioral Data Science
PSY-GS 8876 Psychological Measurement
PSY-GS 8879 Factor Analysis
PSY-GS 8885 Applied Latent Class and Mixture Modeling
PSY-GS 8888 Latent Growth Curve Modeling
DS 5740 Advanced Statistics for Data Scientists

First Year Research (6 credit hours)

PSY-GS 7951 Research Practicum in Cognitive Psychology I (3) **Fall semester of the first year*
PSY-GS 7952 Research Practicum in Cognitive Psychology II (3) ***Spring semester of the first year*

Second Year Research: Thesis or Capstone (6 credit hours)

PSY-GS 7999 Master's Thesis Research (6) **Thesis option*
Other course(s) with program approval (6) **Non-thesis, capstone option*

Electives (9 credit hours)

Elective courses are selected in collaboration with the student's advisor
**Options:*
PSY-PC 7040 Psychological Foundations of Education (Fall, Spring, Summer)
PSY-PC 7130 Intro to Formal Linguistics (Spring)
PSY-PC 7170 Cognitive Science of Reading (Fall)
PSY-PC 7180 How we talk (Spring)
PSY-PC 7190 Language and the Brain (Spring/Fall)
PSY-PC 8400 Developmental Psychology (Fall)
PSY-GS 8480 Educational Neuroscience
PSY-GS 8500 Special Topics in Psychology (Fall and Spring)
PSY-GS 8550 Neuroscience of Cognition and Behavior (Spring)
PSY-GS 8600 Seminar in Social and Personality Development (Spring)
PSY-GS 8410 Advanced Seminar in Educational Psychology
PSY-GS 8460 Advanced Seminar in Developmental Psychology
PSY-GS 8875 Behavioral Data Science
PSY 4218 Computational Cognitive Modeling (alternate years)
PSY 4720 Experimental Methods in Behavioral Neuroscience
PSY 6218 Computational Cognitive Modeling (Spring)

PSY 4775 Models of Human Memory (Alternate years)
PSY 6775 Models of Human Memory (Alternate years)
PSY 5780 The Visual System (Spring)
PSY 6219 Scientific Computing for Psychological and Brain Science (Fall)
PSY 8355 Diversity and Differentness (Spring)
PSY 8505 Judgement and Decision-Making (Alternate years)
PSY 8507 Computational Neuroscience of Human Vision (Alternate years)
PSY 8543 Seminar: Perception (Spring)
PSY 8551 Seminar: Cognitive Psychology (Fall and Spring)
PSY 8557 Seminar in Cognitive Science (Fall and Spring)
PSY 8906 Evolutionary Psychology (Spring)
PSY 8942 Seminar: Social
CS 4262 Foundations of Machine Learning (Spring)
NURO 8330 Cognitive Neuroscience (Fall)
LLO 82000 Introduction to Data Science
DS 5780 Natural Language Processing
DS 5640 Machine Learning
DS 5660 Deep Learning
HRSP 8001 Language and Memory
HRSP 8376 Language Research Methods
HRSP 8379 Cognitive Neuroscience of Language
HRSP 8381 Advanced Seminar in Language
NURO 8340/8345 Fundamentals of Neuroscience I/II
SPED 7000 Education and Psychology of Exceptional Learners

CPC students may choose to take a course that is not included in the list of approved courses above. Before doing so, they need to seek guidance from their faculty advisor and obtain approval from the program director.

BEYOND COURSEWORK

The training of MS candidates in CPC goes beyond formal coursework. CPC students have several opportunities aimed at giving students professional and research skills. All students are encouraged to attend these events regularly. These events are:

- **CSLD – Cognitive Science of Learning and Development forum.** CPC students are encouraged to attend our weekly departmental colloquium featuring a series of talks by our faculty, doctorate students and invited scholars. CPC students may register for PSY-GS 8690 for 0 credit hours to have this forum reflected in their transcript.
- **A series of career development events.** In Fall 2024 organized in collaboration with Dr. Amy Booth and combined for students in the Psychology Honors Program and CPC. The schedule is reflected in the syllabus for PSY-GS 7951 Research Practicum in Cognitive Psychology.
- **Research Methods in Psychology: Summer self-evaluation and an asynchronous course.** It is highly recommended that all incoming CPC students take some time in the

summer to check their knowledge of research methods in Psychology using the self-test and the key provided by the program director in May. If any significant knowledge gaps are detected students should fill them in by engaging in a self-paced asynchronous course. The course consists of 2 activities:

1) Reading the textbook: Morling, Beth**.** (2012). *Research methods in psychology: Evaluating a world of information* (4th edition). New York, NY: Norton, 2020.
2) Doing the quizzes that go with each chapter using InQuizitive, an online adaptive learning tool that is paired with the Morling e-textbook and provided by the Norton publishing company.

REGISTRATION

Incoming graduate students register for fall courses in mid to late July. Current graduate students will register for spring courses in November, summer courses in March, and fall courses in April.

To track degree progress, students are required to meet with the program director and their faculty advisor before each registration period. To prepare for the meeting, students should review degree requirements and their progress in YES.

Students register for courses online through YES though some courses require additional paperwork. When registering for PSY-GS 7999 students must select 3 credit hours. If they do not, the registration system will default them for 0 credit hours.

LAB ASSIGNMENT

Each student is assigned a primary faculty adviser. Lab placements are typically finalized between May and August. During this period, students will meet with several faculty members they are interested in working with. Lab assignment is guided by the feedback provided by both students and faculty, with the aim of assigning students to their first-choice labs whenever possible. However, due to varying demand and limited advising spots, it may not always be feasible to accommodate everyone's top preference. Students will be notified of their assigned faculty mentor by the first week of classes

GRADUATION

MS students who are scheduled to graduate in a given term must complete the **Intent to Graduate** form in YES following the Registrar's Instructions. After students indicate their intent to graduate, they need to Confirm Their Commencement Participation on YES. We encourage students to participate in the Commencement Ceremony, which occurs in May.

The intent to graduate window is included on the Graduate School calendar and the program will remind eligible students before the deadline.

INTERIM PROGRESS ASSESSMENT

To evaluate students' progress towards completing the program's research/capstone requirements their academic writing and presentation skills will be evaluated over the course of the first year of studies.

The purpose of such interim assessment is to help students achieve two important learning goals of the program.

1) The first learning goal is for students to acquire competency as informed consumers of research. This includes:
    a. A professional-level knowledge of core cognitive psychology concepts, theoretical perspectives, and key empirical findings.
    b. A professional-level knowledge of key research methodology in Cognitive Psychology.
    c. Critical thinking in evaluating existing literature, identifying gaps and opportunities for future research.
2) The second learning goal is for students to master written communication skills for scholarly and professional settings.

Interim progress assessments will be conducted at two key points of the students' first year on the program. At the end of their first semester (Fall of first year) students will be required to submit their Fall semester paper for an evaluation by their faculty advisor. At the end of their second semester (Spring of first year) students will be required to submit their final first-year paper and to give a 10- to 15-minute-long presentation. Both will be evaluated by their faculty advisor. Guidelines for both the paper and the talk will be available to the students via PSY-GS 7951/7952, Research Practicum in Cognitive Psychology I/II. Feedback and comments will be given to the students directly by their advisors. Evaluation and grades will be posted in the gradebook for the Practicum course.

Fall semester final paper guidelines.

The goal of the Fall semester paper is to begin mastering the academic writing skills necessary for the successful completion of the program. The Fall semester paper is a scaled down version of the final first-year paper (see description below). This paper should contain, at a minimum, a comprehensive literature review, followed by a reflection on a potential knowledge gap/problem of practice. Students need to summarize at least 10 sources that help them set up a theoretical framework for their research project or a practical context for their Capstone project. For students who are heading in the direction of a future MS thesis, the literature review should mostly include research papers published in peer-reviewed journals, or book chapters.

After the literature review, students are expected to formulate one or several directions for future research that they may base their own projects on. Students who are heading in the direction of an applied Capstone project may include any relevant published work, including research, patents, statistics, released programming code, etc. in their introduction.

Students who already have a specific research/Capstone project in mind can also include a methods section where they describe the design, variables, analysis plan, application, or anything else that is relevant.

Altogether, the Fall semester paper should go over the "why" (background and motivation), the "what" (your project plans) and the "how" (if students already know what they will be doing). The paper should be written in the APA format, be at least 10 pages long with double spaces between the lines, and contain the following sections:

- *Title page* with the title of the paper, student's name, their advisor's name (not included in the page count).
- *Abstract* giving an overview of the paper including the purpose of the described work and a brief overview of the structure/key ideas (not included in the page count).

- *Literature review*. The main goal of the literature review is to create a conceptual framework/context for the future project. Here, rather than summarizing each of 10 sources, students will need to go over several key findings/ideas/theoretical approaches (whatever is relevant for their own work) followed by examples from the sources that they will have read. The goal of the literature review is to provide **a big picture of the field** rather than to focus on the details of isolated research findings/facts/etc. The two key parameters for the assessment of the quality of the literature review will be **the logical flow of ideas** and **the clarity of the conceptual framework** students will create.
- *Reflection.* In this section, students will give a critical assessment of the existing knowledge in their field. Students will come up with one or more directions for future research. Students can also include some ideas about how to address the gap(s) in the field that they will identify.
- *Methodology.* If a student already has specific plans for a project, this section should contain a detailed description of their methods: a proposed study design, measures and coding, the procedure, the stimuli, their participant recruitment strategy, and other relevant information (for research projects). For Capstone projects, this section should provide the details for the development of their project.
- *Planned data analysis.* In this section, students can describe their analysis plan and make some predictions about potential patterns of results that they may get. If a student is doing a Capstone project, they may use this section to describe the application of their work.
- *References* – at least 10, should be in APA format. For Capstone projects, students will need to search for the appropriate ways to cite different non-research sources that they will include.

First year final paper guidelines

Students' final first-year paper will contain an extensive literature review, and a research/capstone project proposal based on their first-year work in the assigned lab. The paper should be written in the APA format, with double spaces between lines, and contain the following sections.

- *Title page* with the title of the project, student's name, faculty advisor's name.
- *Abstract* giving an overview of the study/capstone project including the purpose, a brief description of the design and results/application if there are any.
- *Introduction* consisting of a literature review relevant to the question investigated in the project. The literature review should set up a conceptual framework for the study/project. At the end of the introduction, students need to state their research question(s) and give an overview of the study. If a student is planning a capstone project, their introduction should set the stage for the problem of practice.
- *Research/Capstone methodology.* The methods section should include a detailed description of the study design, measures and coding, the procedure, the stimuli, the participant recruitment strategy, and other relevant information (for research projects). For Capstone projects, this section should provide all the details for the development and potential application of the project.
- *Planned data analysis/Results section.* If a student has been working on a research project and has already collected some data, this section should contain their statistical analyses and results. If no data has been collected yet this section can be used to describe planned analyses and predicted patterns of results. Students working on a Capstone project may use this section to describe the application of their work.

- *Discussion*. This section should contain potential implications/applications of the obtained findings/capstone work in practice or in research. Potential future directions may also be discussed.
- *References* – should be in APA format.

THESIS OVERVIEW

Master's thesis should be a student's original and independent work containing an empirical investigation. A MS project should consist of at least one research study that may go beyond a student's first-year project (although it can be related to or built on their first-year project). If a student's first-year project is a large-scale time-consuming investigation that takes more than a year to implement it may be reported as a thesis. The main research idea does not have to be the student's original idea. It can be part of a larger project carried out in the lab with their advisor as the PI. However, the student must make a primary effort in implementing the project. The study results do not need to be significant or publishable, although the thesis should be written up in a way that could theoretically be submitted for publication. The thesis will be evaluated by the student's primary advisor and the student's master's committee members. MS committee should consist of a student's faculty advisor and at least one other faculty member. Master's thesis should contain all the parts that are described above in the first-year final paper section with one exception. Instead of planned data analyses students should report their obtained results with the appropriate statistical analyses. For a literature review, students may consider seeking guidance from a librarian with an expertise in Psychology, David Golann.

Guidelines and formatting requirements can be reviewed here. Students may schedule an in-person review of their thesis with the Graduate School (email). Intent to graduate and thesis submission deadlines can be found here.

Most students graduate in May of their second year. In this case, the intent to graduate form is due on February 23d and thesis submission is due on March 22. This means that the defense should take place prior to this date.

Thesis Defense and Submission

After obtaining the final approval of the faculty adviser students schedule an hour-long thesis defense. The defense consists of several sections: 1) student's committee discusses the accomplished work while the student is waiting outside of the room; 2) student makes a 10-15-minute-long presentation about their MS project; 3) questions from the committee to the student about the project; 4) final discussion and thesis defense evaluation (student is absent).

After obtaining the final approval from their committee students submit their thesis project to the Graduate School. Steps for submission:

- Ask the first reader (the faculty advisor) and the second reader (another committee member) to sign the title and the abstract of the thesis. Scan the signed documents unless signed electronically.
- Pay all required fees and submit all required forms to the Graduate School.
- Submit your thesis, signed title page, signed abstract and other required documents electronically through VIREO, the Electronic Thesis & Dissertation review and submission system. Instructions and other requirements regarding the VIREO submission are covered on the Thesis & Dissertation Submission website. Format reviews occur within the VIREO submission process.

CAPSTONE OVERVIEW

The goal of the capstone project option is to allow students to apply their academic knowledge to practical, real-world problems. Unlike a thesis, which typically involves original empirical research and contributes to the academic body of knowledge, a capstone project is more practical and problem-solving oriented. Like the thesis, the capstone project requires literature review and possibly data collection, but the final project is typically aimed at a non-academic audience such as policymakers, educators, software and AI developers, business executives, etc. Capstone is particularly well-suited for students interested in pursuing careers outside of academia or those who wish to engage directly with applied aspects of cognitive psychology.

Capstone projects can be enhanced by internships or fieldwork that provide direct experience with cognitive psychology applications. Students are not required but are encouraged to partner with an organization doing work related to their professional goals. Partnerships give students the opportunity to implement classroom learning. Some examples of internship placements could be in:

- Research institutions
- Schools
- Tech or EdTech companies
- Healthcare facilities
- Business or government agencies
- A non-profit organization

Students should work with their faculty mentor as well as the program director to plan their project, identify a partner or find an internship, and determine the final product(s). There is no set length or structure of a capstone project.

HELPFUL LINKS & STUDENT RESOURCES

Graduate School

- Academic Calendar
- Graduate Catalog
- Checklist for Graduation
- Thesis & Dissertation Guidelines
    - Manuscript Preparation
    - Submission Requirements
- Russell G. Hamilton Graduate Leadership Institute
- Graduate and Postdoc Academic Success Program (GPAS)

Student Care Network

- Office of Student Care Coordination
- Center for Student Wellbeing
- University Counseling Center
- Student Health

Administrative Academic Resources

- University Registrar
- Your Enrollment Services
- YES user guides
- Student Handbook
- International Students – ISSS
- Vanderbilt Information Technology

Teaching, Research, and Writing

- Center for Teaching
- Brightspace at Vanderbilt

- Jean & Alexander Heard Libraries
- Center for Digital Humanities
- The Writing Studio

Identity Centers

- Bishop Joseph Johnson Black Cultural Center
- LGBTQI Life
- Margaret Cuninggim Women's Center
- Center for Spiritual & Religious Life
- Student Center for Social Justice & Identity
- Vanderbilt Hillel

Equal Access

- Title IX
- Student Access Services
- Vanderbilt Office of Equity, Diversity, and Inclusion

Health & Wellness

- Health & Safety Protocols
- Student Recreation and Wellness Center
- Work-Life Balance Nashville

Campus & Security

- VUPD
- Parking Services
- Project Safe
- VandySafe