Psychological and Quantitative Foundations, PhD

Learning Sciences and Educational Psychology

The Doctor of Philosophy program in psychological and quantitative foundations with a learning sciences and educational psychology subprogram requires a minimum of 72 s.h. of graduate credit. Students are expected to maintain a cumulative grade-point average of at least 3.00.

The subprogram synthesizes core content and methods of educational psychology with training in the learning sciences. Educational psychology is characterized by empirical research and theory typical of the social and behavioral sciences. The learning sciences reflects an outgrowth of cognitive science. The field offers a multidisciplinary approach to understanding when, how, and why people learn in social and material contexts that include but are not limited to classrooms. The learning sciences blends theories and methods from several disciplines, such as cognitive psychology, anthropology, instructional design, and more. Students will acquire the depth of knowledge and methodological sophistication necessary for original research that contributes to educational psychology and the learning sciences. They will develop and demonstrate their knowledge of learning theory and design principles in the context of research and design projects.

Students work closely with their advisor to develop a plan of study and define a program that matches their goals and interests. Those who begin the program after earning a master’s degree or with coursework from another program may be able to waive some of the PhD program requirements.

The program of study includes substantive areas within the learning sciences and educational psychology, including courses in cognition, development, learning theory, and the design of instruction, learning environments, and learning technologies. Other learning opportunities include a design project in the second year, a precandidacy independent research project in which students design and carry out original research, a slate of research courses that meet the College of Education’s research requirements, a minor area of a student’s choice, and a dissertation in the student’s area of interest.

Research Requirement

The heart of educational psychology as a field is the creation, dissemination, and use of rigorous research to better understand and address educational issues. While many of the required courses address various aspects of the guiding principles set out by the National Research Council, students engage in the following coursework and research-related activities.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PSQF:6220</td>
<td>Quantitative Educational Research Methodologies</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6243</td>
<td>Intermediate Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:7331</td>
<td>Qualitative Educational Research Method</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6244</td>
<td>Correlation and Regression</td>
<td>4</td>
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<tr>
<td>PSQF:6246</td>
<td>Design of Experiments</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6247</td>
<td>Nonparametric Statistical Methods</td>
<td>3</td>
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Core Courses

The selection of core courses depends on a student's area of specialization. Students choose at least 9 s.h.; they should contact their advisor for additional approved courses.

Cognition, Learning, and Development

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<tr>
<td>PSQF:6213</td>
<td>Advanced Lifespan Development</td>
<td>3</td>
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<tr>
<td>PSQF:6275</td>
<td>Constructivism and Design of Instruction</td>
<td>3</td>
</tr>
<tr>
<td>PSY:6440</td>
<td>Developmental Cognitive Neuroscience</td>
<td>3</td>
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Learning in the Disciplines

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<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EDTL:6267</td>
<td>Seminar: Current Issues in Art Education</td>
<td>3</td>
</tr>
<tr>
<td>EDTL:6315</td>
<td>MA Seminar: English Education</td>
<td>3</td>
</tr>
<tr>
<td>EDTL:6483</td>
<td>Multilingual Education and Applied Linguistics</td>
<td>3</td>
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Research Project

Prior to candidacy and in consultation with a faculty member, students design, implement, and present an original research project. This experience provides the opportunity to conduct a pilot study that will strengthen their thesis in terms of methods, instruments, theoretical grounding, or focus of research question. Student presentations of their research are open to the public. Students are encouraged to submit their study results for broader dissemination at a local, regional, or national conference.

For students who have received approval to omit this requirement because of an empirical thesis that is acceptable to the learning sciences and educational psychology faculty, an additional research course may be required.
EDTL:6570  Foundation of School STEM Curriculum  3
EDTL:6757  Learning in the Science Classroom  3
EDTL:6758  Writing in the Science Classroom  3
EDTL:6833  History and Foundations of Social Studies Education  3

Technology and Media
Course #    Title                                      Hours
PSQF:6208  Digital Media and Learning                3
PSQF:6211  Universal Design and Accessibility for Online Instruction  3
PSQF:6215  Online Instruction: Design and Facilitation  3
PSQF:6216  Tools and Utilities for Online Teaching   3

Seminar
Course #    Title                                      Hours
PSQF:7371  Seminar in Learning Sciences and Educational Psychology (topics vary; may be repeated if content is related to educational psychology)  3

Electives
Students may take up to 6 s.h. of elective coursework. Students can take PSQF:6217 Seminar in College Teaching and/or additional research courses. Other courses may be included in consultation with their advisor.

Minor Area
Students must complete a minimum of 12 s.h. that constitute a coherent program of coursework outside educational psychology and beyond the courses listed above. The minor area may be from a foundation discipline such as mathematics education, educational philosophy, or program evaluation. Courses must be numbered 5000 or above, can span across departments and colleges, and must be consistent with a plan approved by a student's advisor.

Comprehensive Examination
The PhD comprehensive examination emphasizes competence and depth in one or more narrowly defined areas of research and theory. Students choose from three options in consultation with their advisor and with the approval of their examining committee that is composed of five faculty members. It does not necessarily include the same faculty members as the dissertation committee.

The options are a traditional comprehensive examination that includes foundational content in educational psychology and learning sciences, the student's minor area, and a specialty area of the student's choice; a review article; or an extended research activity. For details of each option's requirements, contact the Department of Psychological and Quantitative Foundations.

Admission
Applicants must meet the admission requirements of the Graduate College, including the minimum grade-point average. They must have a verbal score of at least 150 and a quantitative score of at least 152 on the Graduate Record Examination (GRE) General Test; successful applicants usually score higher (the GRE is optional).

Applicants whose first language is not English must submit official test scores to verify English proficiency. Applicants can verify English proficiency by submitting official test scores from the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or the Duolingo English Test (DET).

Applicants who do not meet all admission requirements may be granted conditional admission on the basis of other evidence, such as high grade-point average, strong academic preparation, and highly supportive recommendations. Conditional admission is rare.

Applications must include the following:
- University of Iowa application packet (and fee);
- a personal statement addressing the applicant's motivation for attending graduate school in general and the University of Iowa specifically, motivation for seeking advanced degree in learning sciences and educational psychology, potential research interests, and specific things the applicant has done that are relevant to the desire to attend and their potential success in graduate school;
- three academic or professional references who will be prompted by the admissions system to provide letters of recommendation; and
- either GRE General Test scores (preferred) or an academic or professional writing sample such as an academic paper (coursework or publication), project report, research proposal, or creative work that includes a written component; and
- for international applicants, TOEFL or other score as approved by the University of Iowa.

Following an initial review of the application, applicants may be asked to participate in a virtual interview with one or more faculty members. No preparation is required for this interview, it provides faculty members an opportunity to better understand the applicant's graduate school goals and provides applicants with an opportunity to ask questions about the program.

Admission is for fall entry. Application deadline is Jan. 15; late applications might not be considered for funding. Review of applications begins soon after, when applicants who wish to be considered for fellowships and other awards are screened. Admission decisions are announced approximately six weeks after the application deadline.

Applicants who accept admission or financial aid and do not relinquish either one on or before April 15 may not solicit or accept another offer. Offers made by the program after April 15 include the provision that the offer is void if the applicant has accepted and continues to hold a previous offer from another program listed in the American Psychological Association publication Graduate Study in Psychology and Associated Fields. This policy is consistent with standards set by the association's Board of Educational Affairs.