**Psychological and Quantitative Foundations**

**Chair**  
- Timothy N. Ansley

**Undergraduate minor:** educational psychology  
**Graduate degrees:** M.A. in psychological and quantitative foundations; Ed.S. in psychological and quantitative foundations; Ph.D. in psychological and quantitative foundations  
**Faculty:** [http://www.education.uiowa.edu/pq/people](http://www.education.uiowa.edu/pq/people)  
**Web site:** [http://www.education.uiowa.edu/pq](http://www.education.uiowa.edu/pq)

The Department of Psychological and Quantitative Foundations offers programs in four areas: counseling psychology, educational measurement and statistics, educational psychology, and school psychology. These programs have two general goals: to help students acquire the knowledge and skills necessary to function effectively in settings that require the application of psychological and quantitative principles; and to extend knowledge and understanding of the teaching/learning process as it occurs in a variety of settings. The department's degree programs incorporate both goals, but the Master of Arts and Specialist in Education programs emphasize the first goal, and the Doctor of Philosophy programs emphasize the second.

**Undergraduate Program of Study**  
- Minor in educational psychology

In addition to offering a minor for undergraduates, the department offers a course that is approved for the Quantitative or Formal Reasoning area of the College of Liberal Arts and Sciences General Education Program, PSQF:1020 Elementary Statistics and Inference.

**Minor**  

The minor in educational psychology is open to all College of Liberal Arts and Sciences students enrolled in an undergraduate degree program. The minor provides an enriched background in educational psychology, education testing, and research methods in education. It does not lead to certification for public school teaching. Students earning the minor select a department advisor, who helps them choose appropriate course work.

The minor in educational psychology requires 15 s.h., including 12 s.h. earned at the University of Iowa and 12 s.h. earned in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.50 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Transfer credit must be approved in order to count toward the minor.

Course work for the minor must include 15 s.h. selected from the following list.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:1075</td>
<td>Educational Psychology and Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4106</td>
<td>Child Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4111</td>
<td>Human Motivation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4120</td>
<td>Psychology of Giftedness</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4130</td>
<td>Early Adolescent Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4133</td>
<td>The Adolescent and Young Adult</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4134</td>
<td>Parent-Teacher Communication</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>PSQF:4143</td>
<td>Introduction to Statistical Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4150</td>
<td>Introduction to Educational Measurement</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>PSQF:5165</td>
<td>Introduction to Program and Project Evaluation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6203</td>
<td>Tools and External Representations in Learning Processes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6205</td>
<td>Design of Instruction</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Contact the Office of Education Services for more information about the minor.

**Graduate Programs of Study**

- Master of Arts in psychological and quantitative foundations
- Specialist in Education in psychological and quantitative foundations
- Doctor of Philosophy in psychological and quantitative foundations

The department offers graduate degree programs in four major areas within psychological and quantitative foundations:

- Counseling psychology (offered in the M.A. and Ph.D.);
- Educational measurement and statistics (offered in the M.A. and Ph.D.);
- Educational psychology (offered in the M.A. and Ph.D.); and
- School psychology (offered in the Ed.S. and Ph.D.).

Each program is described below.

Applicants for admission to University of Iowa graduate degree programs must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**M.A.: Counseling Psychology (Hong Kong)**

The Master of Arts in counseling psychology program is held in Hong Kong. It provides students with education in the theories, research, and scholarship about the principles and foundational knowledge in counseling psychology. Students learn relevant psychological interventions, strategies, and remediation to work with people in order to effectively solve problems, respond to client situations, and plan for the future. Since there is no supervised practicum component to this degree, students who graduate with the M.A. are not eligible to practice counseling psychology or be licensed in the United States. However, students will be qualified to apply for doctoral programs in professional psychology and counseling fields, such as clinical counseling, school psychology, counselor education, rehabilitation counseling, and school counseling.

The M.A. in counseling psychology requires a minimum of 34 s.h. of graduate credit with no thesis. Prerequisites for some of the required courses may mean that students will need to complete additional course work. Students are expected to maintain a minimum g.p.a. of 2.75 in all work for the degree. Courses are taught year round, and each
course covers one month of instruction and one month of no instruction. Students can complete their M.A. in at least 24 months.

The following course work is required.

**REQUIRED COURSES**

- PSQF:6235 Multicultural Counseling 3 s.h.
- PSQF:6246 Design of Experiments (section EXW) 4 s.h.
- PSQF:6312 Psychopathology Across the Lifespan 3 s.h.
- PSQF:7306 Psychotherapy III: Work Psychology and Career Interventions 3 s.h.
- PSQF:7457 Advanced Group Leadership Experience 3 s.h.
- PSQF:7465 Issues and Ethics in Professional Psychology 3 s.h.
- RCE:4162 Introduction to Couple and Family Therapy 3 s.h.
- RCE:4174 Positive Psychology 3 s.h.
- An introduction to psychological counseling and microskills in counseling course (consult advisor) 3 s.h.
- A health and wellness counseling and psychology course (consult advisor) 3 s.h.
- An assessment and diagnosis counseling course (consult advisor) 3 s.h.

**ADMISSION**

Students with interest in the program must have a minimum g.p.a. of 3.00 on previous college course work and a Test of English as a Foreign Language (TOEFL) score of 81 (Internet-based test) or 550 or higher on the paper-based test.

All students must submit an application for admission through the Office of Admissions, two letters of recommendation, a professional résumé (CV), a personal statement detailing the reasons for seeking admission to the program, and a writing sample.

Faculty in the counseling psychology program will review applications and make the decisions on who is admitted to the program. Students are admitted to the program in the fall, spring, and summer sessions.

**Ph.D.: Counseling Psychology**

The Doctor of Philosophy program in counseling psychology requires a minimum of 111 s.h. of graduate credit. All students must study full time. The program is fully accredited by the American Psychological Association.

The Ph.D. program’s goal is to prepare counseling psychologists who will promote psychology as a science and contribute to the advancement of the profession. The faculty endorses a scientist/practitioner model of training and expects students to become competent researchers and proficient practitioners. Graduates find positions in a variety of settings, including higher education, counseling centers, clinics, private practice settings, and hospitals.

Students in the program must show appropriate levels of emotional balance and interpersonal skills and act within the American Psychological Association Ethical Principles of Psychologists. For more information, contact the program director.

The Ph.D. program in counseling psychology requires the following work.

**RESEARCH REQUIREMENT**

The following courses are required.

All of these:

- PSQF:6243 Intermediate Statistical Methods 4 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.
- PSQF:7394 Supervised Research in Counseling Psychology (at least 4 s.h. is required; students enroll for 1 s.h. per semester for up to four semesters) 4 s.h.

Qualitative and quantitative methodology is discussed in PSQF:7394 Supervised Research in Counseling Psychology, which is directed each semester by faculty advisors. Research from each student is discussed and evaluated, critiqued, and supported.

One of these:

- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.

**BASIC PSYCHOLOGY**

All students are required to have a thorough grounding in the basic discipline of psychology. This may be achieved through a minimum of 3 s.h. of credit in each of the following four areas: biological bases of behavior, cognitive-affective bases of behavior, social bases of behavior, and history and systems. Students complete an additional 6 s.h. in the area of individual differences.

**COUNSELING PSYCHOLOGY CORE**

The following courses are required.

All of these:

- PSQF:6223 & PSQF:6225 Introduction to Counseling Psychology Practice/Research I-II 6 s.h.
- PSQF:6235 Multicultural Counseling 3 s.h.
- PSQF:7305 Psychotherapy I: Dynamic and Phenomenological Approaches 3 s.h.
- PSQF:7306 Psychotherapy III: Work Psychology and Career Interventions 3 s.h.
- PSQF:7309 Personality Assessment 3 s.h.
- PSQF:7310 Intelligence Assessment 3 s.h.
- PSQF:7356 Process and Outcomes in Counseling Psychotherapy 3 s.h.
- PSQF:7365 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
- PSQF:7434 Practicum in Counseling Psychology 3 s.h.
- PSQF:7452 Leadership, Consultation, and Supervision 3 s.h.
- PSQF:7453 Advanced Practicum in Counseling Psychology (repeatable) 1-3 s.h.
- PSQF:7465 Issues and Ethics in Professional Psychology 3 s.h.

Students must enroll in practicums to reach a specified level of client contact, supervision, and additional experience hours. The first practicum’s site is typically University Counseling Service. Subsequent placements at other sites must have prior approval of the counseling
ELECTIVES
Elective courses are determined in collaboration with the major advisor.

INTERNSHIP
Students spend a calendar year in an internship setting approved by the counseling psychology faculty. The faculty determines student readiness to apply for the internship based on completion of all or almost all required course work, satisfactory progress toward completion of the portfolio requirement, and successful completion of practicum requirements. Internships usually require geographic relocation.

COMPREHENSIVE EXAM AND DISSERTATION
Comprehensive examinations are written in counseling psychology ethics and issues. The comprehensive examination is structured as a component of the portfolio review. For more information, contact the program coordinator.

The dissertation research study is planned in collaboration with the doctoral student’s major advisor. Dissertation credit ranges from 12 to 15 s.h.

ADMISSION
Applicants to the Ph.D. program in counseling psychology must meet the admission requirements of the Graduate College. Preference is given to applicants who have an undergraduate g.p.a. above 3.00 and a graduate g.p.a. above 3.50; an undergraduate major, minor, or substantial course work in psychology; a Graduate Record Examination (GRE) General Test verbal score of 152 or higher, quantitative score of 151 or higher, and analytical writing score of 3.5 or higher; and previous research and counseling experience.

Application materials must include a Graduate College application form; official transcripts of all previous college work; an official report of GRE General Test scores (the GRE advanced test in psychology is recommended but not required); a personal statement outlining career goals and reasons for seeking advanced training in counseling psychology; and three letters of recommendation from individuals qualified to assess the applicant’s potential for completing the doctoral program. The faculty encourages applications from minorities, women, and persons from a wide range of backgrounds and academic preparation. The program typically accepts between five and eight students each year.

Students begin the program in fall. Application deadline is December 1; admission decisions usually are made by March 1. Applicants are invited to campus for interviews before final selection.

M.A.: Educational Measurement and Statistics
The Master of Arts program in educational measurement and statistics requires a minimum of 30 s.h. of graduate credit with thesis and 32 s.h. of graduate credit without thesis. The program provides students with basic knowledge of educational measurement and research methodology. Graduates find employment in large school systems, state departments of education, test publishing organizations, and research centers. The program also is appropriate for students who wish to broaden their knowledge of measurement and research methodology for personal development or professional improvement.

All M.A. students must complete a core of courses (approximately 26 s.h.) that includes a graduate-level survey course in educational psychology, elementary and intermediate courses in statistical methods, a course in educational research methodology, and courses in the development and use of evaluation instruments. Students who already have completed equivalent courses at another institution may add more advanced courses to the core.

Thesis students complete 2 s.h. of additional course work beyond the core and earn 2-4 s.h. of thesis credit. Nonthesis students complete 6 s.h. of additional course work beyond the core.

The six-hour comprehensive examination typically includes three-hour examinations in educational measurement and in applied statistics. With the approval of the M.A. committee, a student may take two-hour examinations in these fields plus a two-hour examination in educational psychology or a substitute area. Three-hour examinations assume a minimum of three courses in the area; two-hour examinations assume a minimum of two courses in the area.

ADMISSION
Applicants to the M.A. program in educational measurement and statistics must meet the admission requirements of the Graduate College. They should have a combined verbal and quantitative score of at least 300 on the Graduate Record Examination (GRE) General Test. Completion of at least one college mathematics course and experience as a teacher or researcher are desirable. Applicants who do not meet these requirements but who show offsetting evidence of superior ability may be granted conditional admission.

Applicants must submit a statement of purpose that explains how the educational measurement and statistics program will help them accomplish their educational and vocational goals.

For information about admission dates, contact the educational measurement and statistics program coordinator.

Ph.D.: Educational Measurement and Statistics
The Doctor of Philosophy program in educational measurement and statistics requires a minimum of 90 s.h. of graduate credit. The program prepares students for senior professional positions in educational measurement, evaluation, and statistical methods. Graduates find employment in colleges and universities, state and federal agencies, large public and private school systems, test publishing firms, and research centers.

During the first year of graduate study, a student and his or her advisor plan a program of study appropriate for the student’s interests and vocational objectives. The typical program involves advanced work in educational measurement, data analysis methods, research
methodology, and educational psychology. Work in other University of Iowa departments is encouraged.

Students who concentrate in statistics and intend to teach at the college level take courses in the mathematical theory of statistics. Those who concentrate in educational measurement and evaluation take appropriate courses in curriculum, counseling, or higher education.

All students are required to develop familiarity with computer programming techniques and equipment.

Students who enter the program without completing an M.A. thesis must complete a substitute project before taking the Ph.D. comprehensive examinations.

After completing most of their course work, students take the comprehensive examination, which typically consists of three 3-hour written examinations on educational measurement, applied statistics, and program evaluation, or approved substitute areas, such as educational psychology or mathematical statistics, in which a student has completed at least 9 s.h. of course work. In place of one written examination, the student’s committee may assign a project involving analytical and evaluative skills, or research creativity. The written examinations are followed by an oral examination in which the committee seeks further evidence of the student’s command of the three fields. A single decision is made on all aspects of the comprehensive examination.

Work for the Ph.D. concludes with the dissertation, which is included in the 90 s.h. required for the degree.

**RESEARCH REQUIREMENT**

One of these:

- PSQF:6220 Quantitative Educational Research 3 s.h.
- An equivalent course comparable in content and level of rigor, such as EALL:5150

**Quantitative Requirements**

This course:

- PSQF:6243 Intermediate Statistical Methods 4 s.h.

Two of these:

- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.
- PSQF:6247 Nonparametric Statistical Methods 3 s.h.
- PSQF:6249 Factor Analysis and Structural Equation Models 3 s.h.
- PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.
- EPLS:5176 Demographic Techniques for Educational Research 3 s.h.
- EPLS:6206 Research Process and Design 3 s.h.
- EPLS:6209 Survey Research and Design 3 s.h.
- EPLS:6370 Quantitative Methods for Policy Analysis 3 s.h.

**Qualitative Requirements**

The following course may be taken on a non-graded basis with approval of a student’s program and advisor.

One of these:

- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.
- EDTL:7070 Introduction to Qualitative Methods in Literacy Research 3 s.h.
- EPLS:7373 Qualitative Research Design and Methods 3 s.h.
- RCE:7338 Essentials of Qualitative Inquiry 3 s.h.

An equivalent course comparable in content and level of rigor

One of these:

- PSQF:5165 Introduction to Program and Project Evaluation 3 s.h.
- PSQF:6265 Program Evaluation 3 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is conducting research online) 3 s.h.
- CNW:6654 Forms of the Essay (when topic is the ethnographic essay) arr.
- EDTL:6267 Seminar: Current Issues in Art Education (when topic is qualitative methods) 3-4 s.h.
- EDTL:7071 Critical Discourse Analysis in Educational Research 3 s.h.
- EDTL:7072 Advanced Methods of Literacy Research: Qualitative Data Analysis and Reporting 3 s.h.
- EDTL:7073 Ethnographic Methods, Theories, and Texts 3 s.h.
- EDTL:7410 Mixed Methods Research 3 s.h.
- EDTL:7751 Advanced Qualitative Data Analysis 3 s.h.
- EDTL:7774 Qualitative Research with Computer-Aided Qualitative Data Analysis Software 3 s.h.
- EDTL:7953 Seminar: Single Subject Design Research 3 s.h.
- EPLS:5195 Research in Cross-Cultural Settings 3 s.h.
- EPLS:5240 Topics in Education (when topic is introduction to historical methodology) arr.
- HIST:7197 The Art and Craft of Historical Writing arr.
- RCE:7438 Advanced Qualitative Research Seminar in Rehabilitation and Counselor Education 3 s.h.
- RCE:7444 Qualitative Research in the Multicultural Context 3 s.h.

**ADMISSION**

Applicants to the Ph.D. program in educational measurement and statistics must meet the admission requirements of the Graduate College. They must have a combined verbal and quantitative score of at least 300 on the Graduate Record Examination (GRE) General Test and must hold an M.A. from an accredited institution. At least one year of professional experience in teaching, research, or a related field is desirable. Applicants who expect to concentrate in statistics should have training in college mathematics through differential and integral calculus. Applicants who do not meet these requirements
but who show offsetting evidence of superior ability may be granted conditional admission.

Applicants must submit a statement of purpose that explains how the educational measurement and statistics program will help them accomplish their educational and vocational goals.

For information about admission dates, contact the educational measurement and statistics program coordinator.

**M.A.: Educational Psychology**

The Master of Arts in educational psychology is designed to help students become more effective practitioners by enhancing their ability to make responsible and creative decisions about how to help all of their students learn. By providing an evidence-based perspective on instructional approaches that work, it also addresses the emphasis on teachers' accountability for choosing empirically supported approaches.

The M.A. in educational psychology is designed for working educators. Many of the program courses are offered in late afternoons, evenings, and summers. Each student’s progress is evaluated by the faculty after one academic year (two semesters) of study and during subsequent years.

The M.A. in educational psychology requires a minimum of 30 s.h. of graduate credit. A thesis is not required. Students develop a program of study in consultation with their advisors.

Students complete a required common core, select educational psychology courses and electives appropriate to their professional goals, and complete a capstone portfolio project. The two core courses, which are taken during the first year, prepare students for the M.A. program. Educational Psychology (PSQF:6200) introduces them to a broad sampling of topics in educational psychology (e.g., development, cognition, motivation). Also during the first year, students begin their portfolios, which they continue to build throughout the program and complete during their final M.A. semester.

Full-time M.A. students typically take at least 9 s.h. each semester, with the option of additional summer session work; they usually complete the program in four semesters. Part-time M.A. students take 3-6 s.h. each semester; they usually complete the degree in two or three years.

Students may apply to substitute equivalent course work from another institution or department for required or recommended courses.

**CONTENT COURSES**

Educational psychology—15-21 s.h. from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:4106</td>
<td>Child Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4111</td>
<td>Human Motivation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4130</td>
<td>Early Adolescent Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4133</td>
<td>The Adolescent and Young Adult</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6203</td>
<td>Tools and External Representations in Learning Processes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6204</td>
<td>Foundations of the Learning Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6205</td>
<td>Design of Instruction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6208</td>
<td>Designing Educational Multimedia</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6215</td>
<td>Web-Based Learning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6217</td>
<td>Seminar in College Teaching</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>PSQF:6281</td>
<td>Cognitive Theories of Learning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6301</td>
<td>Human Abilities</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students may request permission to substitute other courses with consent of their advisor.

**ELECTIVES**

Students select two electives (6 s.h.) based on their interests and in consultation with their advisors. Electives typically are chosen from areas outside educational psychology.

**PORTFOLIO PROJECT**

The program’s capstone project is a portfolio. Students enroll in PSQF:6299 M.A. Project: The Portfolio (3 s.h.) during their final M.A. semester.

The portfolio is a creative and highly individual project. Each student’s portfolio reflects his or her own unique learning and synthesis of knowledge. Students begin building the portfolio during their first year, making an entry as they complete each course throughout the M.A. program. Portfolio entries vary widely. For example, the entry for a technology course might include a website a student developed for the course, while the entry for a development course might detail an intervention program the student constructed to address problems of student aggression.

During enrollment in PSQF:6299, a student revises and reflects on the portfolio contents and then presents the portfolio as the culmination of his or her work throughout the program. The portfolio’s goal is to show how understanding and practical application of educational psychology can help the student become a more effective educator.

This course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:6299</td>
<td>M.A. Project: The Portfolio</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**ADMISSION**

Applicants to the M.A. program in educational psychology must meet the admission requirements of the Graduate College, including the minimum grade-point average. Viable applicants have a verbal score of at least 146 and a quantitative score of at least 149 on the Graduate Record Examination (GRE) General Test; successful applicants usually score higher. International applicants whose first language is not English must submit acceptable scores on the Test of English as a Foreign Language (TOEFL). Teaching experience is desirable but not required.
Ph.D.: Educational Psychology

Educational psychology is characterized by empirical research and theory typical of the social and behavioral sciences. The Doctor of Philosophy program in educational psychology requires a minimum of 72 s.h. of graduate credit. It is designed to help students master the core content and methods of educational psychology and acquire the depth of knowledge and methodological sophistication necessary for original research that contributes to the discipline.

Students work closely with their advisor to define a program that matches their goals and interests. They develop a plan of study in consultation with their advisors. Those who begin the program after earning a master's degree or with course work from another program may be able to waive some of the Ph.D. program's requirements. Students who enter the program without completion of a M.A. thesis are required to complete a research practicum in which students assist with and later design and carry out original research during their first or second year. Students who have completed an empirical M.A. thesis acceptable to the faculty may omit the second-year project.

The program of study includes substantive areas within educational psychology and the learning sciences, including courses in cognition, development, learning theory, and the design of instruction, learning environments, and learning technologies. Other learning opportunities include a research practicum in which students assist with and eventually design and carry out original research, a slate of research courses that meet the College of Education’s research requirements, a minor area of the 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 course work and research-related activities.

Required Course Work

Quantitative and qualitative research methods—both of these:

- PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
- PSQF:7331 Seminar: Educational Psychology 3 s.h.

I—Current Topics (when topic is qualitative educational research methods)

Central to understanding research in the field is the understanding and use of statistical methods. Statistics—this course:

- PSQF:6243 Intermediate Statistical Methods 4 s.h.

Based on the types of questions encountered in the field, students benefit from additional exposure to quantitative methods.

Quantitative methods—one of these:

- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.
- PSQF:6247 Nonparametric Statistical Methods 3 s.h.
- PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.

Research Project

In consultation with a faculty member, students design, implement, and present an original second-year research study. 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.

- PSQF:6230 Research in Educational Psychology 3 s.h.

Additional Course Work

To develop specific competencies that are related to research, doctoral students in educational psychology are encouraged to select from the following elective courses.

- PSQF:6245 Applied Multivariate Analysis 3 s.h.
- PSQF:6257 Educational Measurement and Evaluation 3 s.h.
- PSQF:6265 Program Evaluation 3 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is research writing in education or conducting research online; 3 s.h. each)

Advanced qualitative course (consult with advisor)

- Mixed methods course (consult with advisor)

Research-Related Activities

Students are encouraged to participate in research experiences beyond their course work. They are encouraged to

- attend research conferences as a presenter or audience member;
- become members of professional research organizations such as the American Educational Research Association;
- volunteer as proposal reviewers for conferences in their areas of expertise later in their program of study; and
- work with faculty members on faculty research projects.
REQUIRED COURSES

All of these:

- PSQF:6200 Educational Psychology (3 s.h.)
- PSQF:6205 Design of Instruction (3 s.h.)
- PSQF:6281 Cognitive Theories of Learning (3 s.h.)
- PSQF:7493 Ph.D. Thesis in Psychological and Quantitative Foundations (minimum requirement) (10 s.h.)

CORE COURSES

Selection of courses depend on the student's area of specialization.

At least 15 s.h. from these:

- PSQF:6203 Tools and External Representations in Learning Processes (3 s.h.)
- PSQF:6204 Foundations of the Learning Sciences (3 s.h.)
- PSQF:6206 Advanced Child Development (3 s.h.)
- PSQF:6208 Designing Educational Multimedia (3 s.h.)
- PSQF:6215 Web-Based Learning (3 s.h.)
- PSQF:6275 Constructivism and Design of Instruction (3 s.h.)
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (topics vary; may be repeated if content is related to educational psychology) (arr.)

ELECTIVES

Students may take up to 9 s.h. of elective course work. Students can take PSQF:6217 Seminar in College Teaching and/or additional research courses. See "Research Requirement" above. Other courses may be included in consultation with the advisor.

MINOR AREA

Students must complete a minimum of 12 s.h. that constitute a coherent program of course work outside educational psychology and beyond the courses listed above. The minor area may be from a foundation discipline such as psychology or in another area of education 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 Ph.D. 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 the examining committee, composed of five faculty members and does not necessarily include the same faculty members as the dissertation committee. The options are a review article, an extended research activity, or a traditional comprehensive examination. For details of each option's requirements, contact the Department of Psychological and Quantitative Foundations.

ADMISSION

Applicants to the Ph.D. program in educational psychology 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. International applicants whose first language is not English must submit acceptable scores on the Test of English as a Foreign Language (TOEFL). 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.

Admission is for fall entry. Application deadline is February 1; late applications might not be considered. 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.

Ed.S.: School Psychology

The school psychology program admits students at either the Specialist in Education (Ed.S.) or Doctor of Philosophy (Ph.D.) levels. Also, students in the doctoral program may be granted an Ed.S. once they complete the requirements.

The educational specialist program in school psychology requires a minimum of 66 s.h. of graduate credit. The program provides course work and supervised field experience in education and psychology, enabling graduates to qualify for Iowa licensure as a school psychologist (State of Iowa Endorsement 236).

The curriculum includes courses in psychological foundations, psychoeducational foundations, school psychology, and research methods. Other requirements include a written portfolio and a project paper prepared in conjunction with PSQF:7342 Research Project in School Psychology.

The plan of study is as follows.

**FALL SEMESTER, FIRST YEAR**

All of these:

- PSQF:5218 Foundations of School Psychology (4 s.h.)
- PSQF:6251 Individual Intelligence Testing (3 s.h.)
- EDTL:4900 Foundations of Special Education (3 s.h.)
- EDTL:7953 Seminar: Single Subject Design Research Pre-practicum

**SPRING SEMESTER, FIRST YEAR**

All of these:

- PSQF:6206 Advanced Child Development (3 s.h.)
- PSQF:6238 Assessment of Learning Differences (3 s.h.)
- PSQF:6263 Consultation Theory and Practice (3 s.h.)
Ph.D.: School Psychology

The Doctor of Philosophy program in school psychology requires a minimum of 125 s.h. of graduate credit. The program is fully accredited by the American Psychological Association.

The program's goal is to prepare doctoral-level school psychologists who will promote psychology as a science and contribute to the advancement of the profession. The faculty endorses a scientist/practitioner model of training and expects students to become competent researchers and proficient practitioners.

Ph.D. students develop a plan of study in consultation with their academic advisors. All students are required to have a thorough grounding in the basic discipline of psychology, which may be achieved through earning a minimum of 3 s.h. of credit in each of the following areas: biological bases of behavior, cognitive/affective bases of behavior, social bases of behavior, individual differences, and history and systems.

Students are required to complete yearly portfolio reviews, which include oral examinations; carry out a preliminary dissertation research project equivalent in scope to an M.A. thesis; participate in an internship; and complete a doctoral dissertation, earning a minimum of 10 s.h. in PSQF:7493 Ph.D. Thesis in Psychological and Quantitative Foundations.

RESEARCH REQUIREMENT

All of these:
- PSQF:6243 Intermediate Statistical Methods 4 s.h.
- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.

To receive credit for additional courses, students must obtain prior approval from their advisor and the school psychology program.

PROGRAM CORE

The following courses are required.

All of these:
- PSQF:6238 Assessment of Learning Differences (taken with PSQF:7237) 3-4 s.h.
- PSQF:6251 Individual Intelligence Testing (taken with PSQF:7237) 3 s.h.
- PSQF:6263 Consultation Theory and Practice (taken with PSQF:7337) 3 s.h.
- PSQF:7224 Introduction to School Psychology Practice 3 s.h.
- PSQF:7237 Beginning Practicum in School Psychological Service (minimum of 150 hours required) 3 s.h.
- PSQF:7313 Psychopathology in Childhood 3 s.h.
- PSQF:7315 Social and Emotional Assessment of Children and Adolescents 3 s.h.
- PSQF:7337 Advanced Practicum in School Psychology (minimum of 750 hours required) 12 s.h.
- PSQF:7352 Seminar: Behavioral Assessment and Evaluation 3 s.h.
- PSQF:7367 Social Psychology and Social Systems 3 s.h.
- PSQF:7380 Practicum in College Teaching (optional) 1-3 s.h.
- PSQF:7390 Supervision of School Psychology Practicum/Internship 1 s.h.
PSQF:7437 Internship in School Psychology 3 s.h.
(one year full-time or two years half-time; total of 1800 hours required)
Program course work in evaluation
Students must enroll in practicums to reach a specified level of client contact, supervision, and additional experience hours. Placements must have prior approval of the school psychology faculty. Students must successfully complete one semester of PSQF:7237 Beginning Practicum in School Psychological Service before enrolling in PSQF:7337 Advanced Practicum in School Psychology. Students must adhere to the most recent ethical principles and standards of the American Psychological Association.

ADMISSION
Applicants to the Ph.D. program in school psychology must meet the admission requirements of the Graduate College. Preference is given to applicants with an undergraduate major in psychology or education and a g.p.a. above 3.00. A combined verbal and quantitative score of 308 or higher and an analytic writing score of 4 or higher on the Graduate Record Examination (GRE) General Test are recommended but not required. The faculty also encourages applications from individuals with an M.A. or Ed.S. and experience as psychologists or other human service providers.

Applications must include three letters of recommendation, a personal statement of interest and goals, and a writing sample. Complete application materials, including transcripts and test scores, must be received by January 1 to be considered for fall entry. Admission decisions are usually made by March 15. The program admits from six to eight students each year.

Courses
Lower-Level Undergraduate
Students may receive credit for only two of these three courses: STAT:1010 Statistics and Society, STAT:1020 Elementary Statistics and Inference (same as PSQF:1020 Elementary Statistics and Inference), and STAT:1030 Statistics for Business. Credit for STAT:1010 Statistics and Society is given only if the course is taken before STAT:1020 Elementary Statistics and Inference (same as PSQF:1020 Elementary Statistics and Inference) or STAT:1030 Statistics for Business.

PSQF:1020 Elementary Statistics and Inference 3 s.h.
Graphing techniques for presenting data, descriptive statistics, correlation, regression, prediction; logic of statistical inference, elementary probability models, estimation and tests of significance. Requirements: one year of high school algebra or MATH:0100. GE: Quantitative or Formal Reasoning. Same as STAT:1020.

PSQF:1026 Mindfulness: Being Here With It All 2 s.h.
Training in Mindfulness-Based Stress Reduction; application to dealing with life changes (i.e., transition to University life); navigating daily life (academics, roommates, schedules); improving academic skills; self-regulation of emotions; questions of meaning and purpose.

PSQF:1027 Mindfulness Foundations in the Helping Professions 3 s.h.
Training in Mindfulness-Based Practices; application to personal and professional life.

PSQF:1029 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

PSQF:1075 Educational Psychology and Measurement 3 s.h.
Principles and classroom applications of cognitive and social development, learning and cognition, motivation, and assessment.

PSQF:2115 Introduction to Counseling Psychology 3 s.h.
Historical and philosophical foundations of counseling psychology; theories, application, and work of counseling psychologists.

PSQF:2116 Applied Child and Adolescent Psychology 3 s.h.
Overview of child and adolescent development, psychopathology, and basic-level intervention; foundation for working in applied child and adolescent mental health settings; typical areas of psychological difficulty, including developmental disorders, ADHD, depression, anxiety, substance use; contextual and environmental factors, including abuse, poverty, neglect.

Upper-Level Undergraduate and Graduate
Exploration of research-based implications for teaching, learning, and daily living; skillful engagement of demands educators face in personal and professional lives; mindfulness as paying attention in present moment and relating wisely to what is occurring; specific mindfulness practices that integrate awareness into daily living; how research and program evaluations throughout the world document that consistent practice of mindfulness improves attention and concentration; ability to respond skillfully to stress, self-regulation of emotion, physical and mental health, communication, life satisfaction.

PSQF:3103 Early Childhood Guidance 4 s.h.
Effective communication, understanding child development and behavior, appropriate limits and rules, structuring problem solving and consequences, fostering self control, organizing classroom environment and curriculum to support child behavior, methods to address persistent and challenging behaviors; nurturance and child guidance via parenting, child rearing practices, and child-family relations.

PSQF:3104 Multicultural Issues in Counseling and Psychology 3 s.h.
Introduction to multicultural competencies and its importance to counseling, psychology, and helping professions; psychological concepts and research pertaining to privilege; racism, race, culture, sexual orientation, social class and classism, and their application in culturally adapted psychotherapy interventions; how these matters and other cultural identities and constructs are handled and used in applied psychology and counseling; focus on intersection of research and practice.

PSQF:4081 ePortfolio Production 1-2 s.h.
Experience producing an ePortfolio and uploading it to the Internet; practical experience using digital tools, content and design related to ePortfolio production; experience using a web browser and access to the Internet and to a digital camera or scanner. Requirements: able to perform basic computer functions and use a World Wide Web browser. Same as EALL:4081, EDTL:4081, RCE:4081, EPLS:4081.

PSQF:4106 Child Development 3 s.h.
Theories and research findings about typical course of child development, differences in development. Requirements: junior standing.

PSQF:4111 Human Motivation 3 s.h.
Principles of motivation and their application to applied settings, especially to the classroom as teachers try to motivate students. Requirements: junior standing.

PSQF:4120 Psychology of Giftedness 3 s.h.
Theories of learning, child development, motivation; issues unique to gifted education. Same as RCE:4120.

PSQF:4121 Identification of Students for Gifted Programs 3 s.h.
Interpretation of standardized tests and other measurement instruments used to identify academic talent and program effectively for grades K-12; ability, aptitude, achievement tests; current issues in the uses of various instruments. Same as RCE:4121.

PSQF:4122 Math Programming for High Ability Students 1 s.h.
Unique challenges and opportunities confronted by teachers of high-ability students; theory and practice, development of program outlines for implementation. Same as EDTL:4022.

PSQF:4123 Academic Acceleration: Providing Excellence and Equity in Education for High Ability Students 1 s.h.
Acceleration as an effective curricular intervention for high-ability students; forms of acceleration, research evidence for acceleration, and process of implementing acceleration; reasons for persistent negative attitudes about acceleration; advocacy for acceleration; skills for effective practice and implementation. Requirements: computer with internet access, sound card, Adobe Reader, and Adobe Flash Player.

PSQF:4125 Counseling and Psychological Needs of the Gifted 1 s.h.
Psychological aspects of giftedness, counseling techniques appropriate for gifted children, adolescents; socio-emotional concerns, career development, underachievement. Same as RCE:4125.

PSQF:4126 Cognitive and Affective Needs of Underachieving Gifted 1 s.h.
Diagnostic strategy for identifying types of underachievement, teaching and counseling interventions appropriate for each. Same as RCE:4126.

PSQF:4127 Research and Theory in Talent/Giftedness 1 s.h.
Biennial research symposium. Same as RCE:4127.

PSQF:4128 Neuroscientific Implications for Gifted 1 s.h.
Neurology of behavior and neurodegenerative disease; the psychology of learning and memory, its application to gifted education.

PSQF:4129 Creativity: Issues and Applications in Gifted Education 1 s.h.
Theories that underpin contemporary definitions of creativity; instruments developed to measure creativity; activities in the school environment that enhance or inhibit student creativity. Same as RCE:4129.

PSQF:4130 Early Adolescent Development 3 s.h.
Psychological growth and development of the early adolescent (ages 10-14), including the physical, cognitive, social, emotional, and sexual development of the middle-school aged child.

PSQF:4133 The Adolescent and Young Adult 3 s.h.
Psychological and social aspects of adolescence and young adulthood; emphasis on theory, research, and practical applications.

PSQF:4134 Parent-Teacher Communication 1-3 s.h.
Realities of working with parents; interpersonal skills; options for parent support services. Same as EDTL:4934.

PSQF:4136 Home/School/Community Partnerships 3 s.h.
Issues related to collaboration among families, educators, community members in implementing school programs. Same as EDTL:4936.

PSQF:4143 Introduction to Statistical Methods 3 s.h.
Analysis, interpretation of research data; descriptive statistics; introduction to probability, sampling theory, statistical inference (binomial, normal distribution, t-distribution models); linear correlation, regression. Same as STAT:4143.

PSQF:4150 Introduction to Educational Measurement 3-4 s.h.
Test development procedures, reliability, validity, item writing, evaluation of item and test characteristics; classroom assessment methods; interpretation of scores from standardized achievement and aptitude tests; no background in statistics assumed.
PSQF:4520 Bayesian Statistics 3 s.h.
Bayesian statistical analysis, with focus on applications; Bayesian and frequentist methods compared; Bayesian model specification, choice of priors, computational methods; hands-on Bayesian data analysis using appropriate software; interpretation and presentation of analysis results. Prerequisites: STAT:3200 and (STAT:3100 and STAT:3101) or STAT:3120 or (STAT:4100 and STAT:4101). Same as STAT:4520.

Graduate
PSQF:5165 Introduction to Program and Project Evaluation 3 s.h.
Skills and knowledge required for conducting evaluations of products, projects, and programs; recent scholarship on evaluation and project management. Same as EPLS:5165.

PSQF:5193 Special Readings and Projects arr.
Supervised individual study. Requirements: senior standing.

PSQF:5194 Continuing Education Individual Study arr.
Supervised individual study.

PSQF:5199 Topical Workshop in Psychological and Quantitative Foundations
School, educational, and counseling psychology and allied disciplines; for professionals and graduate students in education, mental health, social services, related fields.

PSQF:5218 Foundations of School Psychology 3-4 s.h.
Introduction to field of school psychology; becoming competent practitioners and leaders in school and community settings; roles and functions of school psychologists; ethical standards and issues in the profession of psychology; legal issues involved in practice of school psychology; current topics and trends. Corequisites: PSQF:7224.

PSQF:5226 Assessment of Giftedness 3 s.h.
Training and practice in assessment of gifted children. Same as RCE:5226.

PSQF:6200 Educational Psychology 3 s.h.
Psychology of the learning/instruction process: theoretical perspectives on learning, instruction, motivation, and assessment; developmental concepts, social processes, individual variation, learning and technology, biological basis of learning.

PSQF:6203 Tools and External Representations in Learning Processes 3 s.h.
Theories and issues in the use of technology in learning and teaching; project to design a technology-supported learning solution for an educational problem.

PSQF:6204 Foundations of the Learning Sciences 3 s.h.
Foundations of Interdisciplinary science of learning; theory and method of study of cognition in sociocultural context; design-based approaches to research on learning.

PSQF:6205 Design of Instruction 3 s.h.
Introduction to processes used to design, develop, implement, and evaluate effective instruction; projects.

PSQF:6206 Advanced Child Development 3 s.h.
Theories of social and cognitive development; in-depth study of several current controversies in the field.

PSQF:6208 Designing Educational Multimedia 3 s.h.
Theory, design, and evaluation of instructional software.

PSQF:6209 Survey Research and Design 3 s.h.
Survey design and implementation; writing and evaluation of survey questions; error in survey research; techniques to reduce error; sampling; postcollection processing of survey data. Prerequisites: EPLS:6206 or PSQF:4143. Same as EPLS:6209.

PSQF:6211 Universal Design and Accessibility for Online Instruction 3 s.h.
Universal Design for Learning (UDL) framework; introduction to accessibility for online learning environment; use of UDL with any curriculum to provide more students with access to learning, including online learning environment.

PSQF:6215 Web-Based Learning 3 s.h.
Theory and practice of designing web sites to support or deliver instruction; student team project to create an instructional web site that integrates the theory and principles from class readings.

PSQF:6216 Tools and Utilities for Online Teaching 3 s.h.
Guidance for future online teachers in making well-informed decisions on what technologies need to be adopted and applied for high quality, successful online educational programming in a variety of environments (e.g., K-12, higher education, business and industry); choosing, learning, evaluating, and using different types of technologies to produce online instruction; how to learn; initiating and managing learning and professional development for effective online teaching. Corequisites: PSQF:6205, if not taken as a prerequisite.

PSQF:6217 Seminar in College Teaching 1-3 s.h.
Preparation for college teaching; for graduate students planning to teach. Same as GRAD:6217.

PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
Procedures for planning, conducting, and reporting research; evaluation of current methods in educational research; quantitative designs and methods. Prerequisites: PSQF:4143 or STAT:4143.

PSQF:6223 Introduction to Counseling Psychology Practice/Research I 3 s.h.
Historical, theoretical, professional, scientific traditions associated with counseling psychology; professional ethical principles.

PSQF:6225 Introduction to Counseling Psychology Practice/Research II 3 s.h.
Learning and performance of basic helping skills; integration of these skills with counseling theories, broader counseling strategies; laboratory-based.

**PSQF:6230 Research in Educational Psychology** 1-3 s.h.
Design, implementation, and presentation of an educational psychology empirical research project. Requirements: graduate standing in educational psychology.

**PSQF:6231 Concepts and Principles of Behavior Analysis** 3 s.h.
Comprehensive review of psychological principles of learning derived from experimental research and empirical studies; types of behavior, motivational influences on behavior, respondent behavior and operant conditioning, stimulus control, schedule influences on behavior, observational learning, verbal behavior, rule-governed behavior, and behavioral accounts of language and cognition.

**PSQF:6232 Functional Behavior Assessment and Analysis** 3 s.h.
Understanding the purpose of assessments of behavior, developing assessments based on the presenting problems of behavior, conducting assessments to understand the purpose of behavior, and develop an effective behavior intervention plan; advanced coverage of special topics, including preference assessments and verbal behavior.

**PSQF:6233 Ethics for Behavioral Psychologists** 1 s.h.
Ethics that are unique to applied behavior analysis; ethical considerations.

**PSQF:6235 Multicultural Counseling** 3 s.h.
Theoretical and practical aspects of the cultural adaptation process; implications for interventions in diverse populations; issues. Requirements: counseling skills introductory course.

**PSQF:6236 Counseling and Psychotherapy for Persons with Disabilities** 3 s.h.
Preparation for future psychologists and counselors to work with persons with disabilities throughout the lifespan; examination of disability issues within the context of present and past theoretical constructs. Requirements: enrollment in psychological and quantitative foundations or rehabilitation and counselor education. Same as RCE:6236.

**PSQF:6238 Assessment of Learning Differences** 3-4 s.h.

**PSQF:6242 Selected Applications of Statistics** 3 s.h.
Application and interpretation of correlation techniques, chi-square, t- and f-tests, interval estimation, simple cases of analysis of variance. Prerequisites: PSQF:4143.

**PSQF:6243 Intermediate Statistical Methods** 4 s.h.

**PSQF:6244 Correlation and Regression** 4 s.h.
Correlation techniques; selected bivariate procedures, multiple, partial, curvilinear correlation; multiple linear regression; sampling theory applied to regression analysis and correlation coefficients; simple causal models. Requirements: for PSQF:6244 — PSQF:6243; for STAT:6514 — STAT:6513. Same as STAT:6514.

**PSQF:6245 Applied Multivariate Analysis** 3 s.h.

**PSQF:6246 Design of Experiments** 4 s.h.

**PSQF:6247 Nonparametric Statistical Methods** 3 s.h.
Selected nonparametric methods; one- and two-sample location tests and estimation methods, measures of association, analyses of variance; emphasis on relationships to classical parametric procedures. Prerequisites: PSQF:6243 or STAT:3120. Same as STAT:6547.

**PSQF:6249 Factor Analysis and Structural Equation Models** 3 s.h.
Foundations of exploratory and confirmatory factor analysis methods; least squares and maximum likelihood approaches; problems in factor extraction, rotation, interpretation; structural equation models via LISREL; assumptions and limitations of alternative approaches. Prerequisites: PSQF:6244 and PSQF:6246.

**PSQF:6250 Computer Packages for Statistical Analysis** 1-3 s.h.
Computer programs and systems designed to execute statistical analysis (SAS, SPSS, BMDP, and others); lectures on regression techniques, analysis of variance, multivariate techniques; practice in entering data, calling up desired programs, interpreting computer output. Prerequisites: PSQF:6243. Requirements: elementary knowledge of computer programming.

**PSQF:6251 Individual Intelligence Testing** 3 s.h.
Administration of individual intelligence tests; interpretation of test results; issues in psychological testing; factors that influence performance. Prerequisites: PSQF:4143 or PSQF:4150.
PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.
Selected topics in multivariate analysis, including multivariate significance tests, principal components and factor analysis, discriminant analysis, canonical correlation, multivariate analysis of variance (MANOVA). Prerequisites: PSQF:6244 and PSQF:6246.

PSQF:6255 Construction and Use of Evaluation Instruments 3 s.h.
Design and construction of measures used in educational evaluation: achievement tests, attitude scales, performance measures, questionnaires; emphasis on methods of instrument development and evaluation of instrument characteristics. Prerequisites: PSQF:4143 and PSQF:6257.

PSQF:6257 Educational Measurement and Evaluation 3 s.h.
Evaluation and use of standardized tests and inventories in individual and group assessment; analyzing reliability, validity, normative data; interpreting measures of achievement, intelligence, aptitude, interests, attitudes, personality; current issues; for counselors, administrators, teachers, measurement specialists. Corequisites: PSQF:4143.

PSQF:6258 Theory and Technique in Educational Measurement 3 s.h.
Mathematical foundations, principal results, and applications of classical test theory; perspectives on conditional error variance; binomial error model and applications; introduction to generalizability theory; advanced measurement topics. Prerequisites: PSQF:6243 and PSQF:6257.

PSQF:6259 Scaling Methods 3 s.h.
Unidimensional and multidimensional scaling techniques; item response theory with a focus on polytomous models; introduction to available computer programs for scaling; applications in educational and psychological research. Prerequisites: PSQF:6262. Corequisites: PSQF:6249 and PSQF:6252.

PSQF:6262 Item Response Theory 3 s.h.
Theoretical foundations and practical applications; mathematical models and estimation techniques; emphasis on current applications and issues in testing; computer estimation programs. Prerequisites: PSQF:6243 and PSQF:6257.

PSQF:6263 Consultation Theory and Practice 3 s.h.
Review of concepts and practice of consultation and collaboration in educational and human services settings; focus on mental health, organizational, behavioral, and instructional models. Same as RCE:6263.

PSQF:6265 Program Evaluation 3 s.h.
Theoretical issues and considerations in evaluation of educational and social programs; evaluation design, methodology; metaevaluation; evaluation utilization. Same as EPLS:6266.

PSQF:6275 Constructivism and Design of Instruction 3 s.h.
Theoretical foundations of constructivism; application of constructivist principles to the design of instruction.

PSQF:6281 Cognitive Theories of Learning 3 s.h.
Theories of learning and cognition as they relate to education; development of expertise, transfer of learning, design of learning environments, use of learning technologies. Prerequisites: PSQF:6200.

PSQF:6292 Supervised Research in Educational Psychology 1-3 s.h.
Identification of research problems, development of research designs and materials, conducting of research studies; faculty-guided activity or seminars.

PSQF:6293 Individual Instruction in Psychological and Quantitative Foundations 3 s.h.

PSQF:6299 M.A. Project: The Portfolio 3 s.h.
Individual portfolio project; reflection, revision, and presentation of educational psychology portfolio.

PSQF:6301 Human Abilities 3 s.h.
Psychology of abilities required by or developed through schooling; theories of cognitive abilities, age, sex, ethnic differences; cultivation of intelligence through schooling. Prerequisites: PSQF:4143.

PSQF:6312 Psychopathology Across the Lifespan 3 s.h.
DSM IV categories, related diagnostic issues.

PSQF:7201 Counseling Psychology Research Writing 3 s.h.
How to write scientifically in counseling psychology; qualitative and quantitative research writing, literature reviews, methodologies, discussions; APA style.

PSQF:7224 Introduction to School Psychology Practice 1-3 s.h.
Introduction to the practice of school psychology; framework for understanding role and function, legal and ethical boundaries, professional requirements; preparation for practicum.

Supervised practicum in psychological and educational evaluation in school settings. Prerequisites: PSQF:6238 and PSQF:6251.

Clinical experience in conducting pediatric neuropsychological examinations in the Pediatric Attention/Learning Disorders Clinic. Requirements: course on psychological testing (including IQ) and graduate psychology standing (school, counseling, rehabilitation, clinical). Same as PEDS:7245.

PSQF:7305 Psychotherapy I: Dynamic and Phenomenological Approaches 3 s.h.
Major psychodynamic and existential-phenomenological theories of personality; emphasis on implications for psychotherapy.
PSQF:7306 Psychotherapy III: Work Psychology and Career Interventions 3 s.h.
Foundations of career interventions; emphasis on major assessment instruments (vocational interests, values, abilities/skills, personality) and career counseling processes, skills, techniques.

PSQF:7309 Personality Assessment 3 s.h.
Standardized and projective techniques for personality assessment; preparation for competent administration and interpretation of varied tests and measures.

PSQF:7310 Intelligence Assessment 3 s.h.
Standardized intelligence testing; preparation to administer and interpret intelligence tests for children and adults.

PSQF:7311 Practicum in Counseling and Psychological Services for Gifted Students 1-6 s.h.
Prerequisites: RCE:4178. Requirements: course work in counseling education, counseling psychology, school psychology, educational psychology, or related fields. Same as RCE:7311.

PSQF:7313 Psychopathology in Childhood 3 s.h.
Current theories regarding the development of psychopathology in children and adolescents; current approaches to treatment for disorders in children and adolescents.

PSQF:7315 Social and Emotional Assessment of Children and Adolescents 3 s.h.
Link between personality theory, child and adolescent assessment; interpretation, integration of assessment information; record reviews, interviews, objective tests, projective techniques. Prerequisites: PSQF:6238 and PSQF:6251.

PSQF:7320 History and Systems of Psychology 3 s.h.
Philosophical underpinnings of psychology, early systems in psychology, developments in the 20th century.

PSQF:7331 Seminar: Educational Psychology I—Current Topics arr.
Intensive investigation of a specific research topic.

Supervised experience in psychological interventions, consultation, counseling in school and clinic settings. Prerequisites: PSQF:6238 and PSQF:6251 and PSQF:7237.

Experience in research facilities on campus; writing research questions, planning a research study, writing a research article.

PSQF:7345 Academic Interventions 3 s.h.
Interventions used by school and support system personnel to address academic skill deficits among children, adolescents; instructional design and delivery problems associated with deficits.

PSQF:7346 Behavioral Interventions 3 s.h.
Interventions used by school and support system personnel to address behavioral and social/emotional status of children, adolescents.

PSQF:7347 Home/School/Community: System Interventions 3 s.h.
Interventions used by school and support system personnel; focus on work with parents, siblings. Same as RCE:7347.

PSQF:7350 Seminar in Evaluation 2-3 s.h.
In-depth examination of selected topics. Prerequisites: PSQF:6265. Requirements: two courses in program evaluation.

PSQF:7352 Seminar: Behavioral Assessment and Evaluation 3 s.h.
Broadens skills of graduate students who engage in research with exceptional persons; research designs are usually taught in the Department of Psychological and Quantitative Foundations, but because of the nature of handicapping conditions and the low incidence of some handicaps, the single-subject design yields better research information. Same as EDTL:7952.

PSQF:7354 Seminar: Experimental Approaches in Counseling Research arr.
Application of experimental methodology to study of counseling and vocational phenomena.

Critical examination of current issues and problems of the professional worker in the field of educational measurement and evaluation as reflected in research literature, other professional communication media.

PSQF:7356 Process and Outcomes in Counseling Psychotherapy 3 s.h.
Advanced knowledge of the state of process and outcome research on psychotherapeutic procedures. Requirements: Ph.D. candidacy in appropriate field.

PSQF:7358 Equating and Scaling of Educational Tests 3 s.h.
Designs and methods, including linear, equipercentile, and item response theory methods; emphasis on concepts, applications to testing programs, research. Prerequisites: PSQF:6243 and PSQF:6257.

PSQF:7365 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
Major cognitive and behavioral theories of personality and psychotherapy; emphasis on implications for clinical practice.

PSQF:7367 Social Psychology and Social Systems 3 s.h.
Social aspects of behavior in organizations; behavioral science theory and research on organizations, system change, transformation, leadership.

PSQF:7375 Topics in Educational Measurement and Statistics 1-3 s.h.
PSQF:7380 Practicum in College Teaching
Supervised college teaching experience in courses related to major academic areas, in collaboration with faculty course instructors.

PSQF:7385 Teaching and Learning in Higher Education
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as EPLS:7385, GRAD:7385, EDTL:7385, RCE:7385.

PSQF:7390 Supervision of School Psychology Practicum/Internship
Experience supervising school psychology practicum or internship students. Requirements: Ph.D. standing.

PSQF:7393 M.A. Thesis in Psychological and Quantitative Foundations

PSQF:7394 Supervised Research in Counseling Psychology
1-3 s.h.

PSQF:7434 Practicum in Counseling Psychology
Supervised practice in counseling services. Prerequisites: PSQF:6223 and PSQF:6225.

PSQF:7437 Internship in School Psychology
Supervised internship for Ph.D. students in school psychology. Requirements: completion of required courses.

PSQF:7450 Practicum in Program Evaluation
Supervised experience in designing and implementing components of program evaluations. Prerequisites: PSQF:6265. Requirements: two courses in program evaluation.

PSQF:7452 Leadership, Consultation, and Supervision
Overview of intervention modalities other than individual and group therapy, especially those that pertain to leadership within organizations, consultation with organizations and communities, and supervision of the work of others; capstone course in counseling psychology sequence. Prerequisites: PSQF:6223 and PSQF:6225.

PSQF:7453 Advanced Practicum in Counseling Psychology
Supervised work in counseling services. Prerequisites: PSQF:7434.

PSQF:7455 Generalizability Theory
Analysis of variance methods applied to estimation of components of various types of measurement error variance; basic concepts, mathematical foundations, models, assumptions, designs, applications; relationships with other measurement theories. Prerequisites: PSQF:6246 and PSQF:6258.

PSQF:7457 Advanced Group Leadership Experience
Practice working in a psychotherapy group; review major theories on group psychotherapy processes, integrate empirical research on effectiveness of group work; multicultural considerations in group psychotherapy; didactic and experiential format. Prerequisites: RCE:7357.

PSQF:7458 Internship in Counseling Psychology
Supervised work in internship setting. Prerequisites: PSQF:7434 and PSQF:7453. Requirements: Ph.D. standing in counseling psychology and completion of all requirements except dissertation.

PSQF:7465 Issues and Ethics in Professional Psychology
Professional ethics; issues in professional practice of psychology.

PSQF:7466 Psychological Services to Children, Adolescents, and Families: Legal and Ethical Standards
Review of laws at state and federal level which are related to child, adolescent, and family functioning; emphasis on APA and NASP ethical standards, application of these standards, and ethical decision making models. Recommendations: graduate student who will provide services to children, adolescents, and families.

PSQF:7493 Ph.D. Thesis in Psychological and Quantitative Foundations
arr.