Educational Measurement and Statistics

Information for Prospective Students

The University of Iowa
Dear Prospective Student:

The graduate programs in Educational Measurement and Statistics at The University of Iowa prepare students for careers in educational measurement, evaluation, research, and statistical/quantitative analysis. In addition to academic positions at universities, our graduates are employed in other educational settings (e.g., large school systems, college and university institutional research); government (e.g., state departments of education, state and federal agencies); research and consulting (e.g., research institutes and centers); and testing organizations (e.g., educational/psychological test publishing, professional certification and licensure, college and professional school admissions). Graduates of our programs understand the theories, methods, professional ethics, and applications associated with quantitative research methodology in the social science context. They are qualified to teach at the college/university level, analyze and interpret quantitative data, independently conduct research, translate sophisticated research findings and communicate them to various audiences, design and validate assessments, and apply complex quantitative information in making policy decisions.

**Educational measurement** is one major focus of our graduate programs. The field of educational measurement is undergoing considerable growth and change. Growth is due to the increasing roles that measurement and assessment play in education and educational policy. Initiatives by the U.S. federal government to test all third- through eighth-grade students in reading and mathematics is but one example. Increasing use of computers in testing (e.g., the computer-based GRE) is changing the field. Hence, rapid change and growth are creating many opportunities for individuals who decide to enter this field of study.

**Applied statistics** is another major focus of our graduate programs. There are many opportunities for individuals with skills in applied statistics. For example, individuals in applied statistics might analyze data in education and other areas. Students in our programs also develop skills in **program evaluation** (e.g., evaluating educational programs).

Several faculty members are affiliated with the Iowa Testing Programs, which develops the Iowa Assessments—K-12 achievement tests that are used throughout the United States and Canada. The Iowa Testing Programs support many research assistants who work with faculty on research and development activities that are associated with the Iowa Assessments. Also, faculty members who are affiliated with the Center for Evaluation and Assessment (CEA) and the Center for Advanced Studies in Measurement and Assessment (CASMA) provide support for graduate assistants. Adjunct faculty members work at ACT, where additional opportunities for assistantship support can be found.

The graduate programs in Educational Measurement and Statistics at The University of Iowa prepare students for a wide range of interesting careers in a variety of dynamic, exciting fields. Since Fall 2014, students can complete all course requirements for the Master of Arts (MA) degree through online offerings. I invite you to contact me and to visit our website at [http://www.education.uiowa.edu/pq/measstat](http://www.education.uiowa.edu/pq/measstat).

Sincerely,

Robert Ankenmann  
Associate Professor and Program Coordinator  
Educational Measurement and Statistics  
robert-ankenmann@uiowa.edu
History of the College of Education
Since its founding in 1913, the College of Education has been an integral part of The University of Iowa. The college traces its roots to 1872, when the University created the first permanent department of education at the college level in the United States.

Faculty members have been leaders in a variety of educational fields. For example, E. F. Lindquist—after whom our building is named—is primarily known for his contributions to standardized testing which include developing the Iowa Tests of Basic Skills (ITBS) and the Iowa Tests of Educational Development (ITED), introducing what is known as the ACT, and working on the first practical optical system for test scoring. Contributions such as these helped lay the foundation for today’s testing and measurement industry, making Iowa City one of the best known centers for this educational specialty.

The College Today
The College of Education has four departments:
- Educational Policy and Leadership Studies;
- Psychological and Quantitative Foundations;
- Rehabilitation and Counselor Education; and
- Teaching and Learning.

The College promotes teaching, research, and service to help address educational needs in different settings. While the primary focus is on preparing students for careers in schools, faculty members and students are also actively engaged in exploring and finding solutions to education-based problems in such settings as businesses, industries, counseling centers, and hospitals.

Graduate Study in the College
The College of Education prides itself on its high-quality graduate programs and has been recognized as one of the top 20 graduate colleges of education in the United States. Students have opportunities to work with faculty mentors on research, teaching, and service projects. For excellent students, teaching and research assistantships, fellowships, and scholarships may be available. Additionally, Iowa Testing Programs, the Center for Evaluation and Assessment, and the Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development offer graduate students a variety of experiences, including practica and research assistantships.

The Department
The Department of Psychological and Quantitative Foundations offers programs in four areas:
- counseling psychology,
- educational psychology,
- school psychology, and
- educational measurement and statistics.

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.

Special Facilities and Resources in the College of Education
The Education Technology Center (ETC) provides services to students, faculty, and staff. Resources include a computer lab, classrooms, and equipment for checkout. The ETC also provides access to assistive technology.

The Iowa Center for Assistive Technology Education and Research (ICATER)—located in the ETC—provides hands-on training to University students and faculty and examines the effectiveness of assistive technology. The Center also assists in educating future teachers. Emphasis is placed on education, training, and research.

The Center for Evaluation and Assessment (CEA) provides consulting services on campus and across the nation in the assessment of college outcomes and in the evaluation of educational and social programs.

The Center for Advanced Studies in Measurement and Assessment (CASMA) pursues research-based initiatives that lead to advancements in the methodology and practice of educational measurement and assessment. When they relate to the primary mission, interdisciplinary measurement and assessment activities, as well as international activities, may be pursued.
The Iowa Testing Programs (ITP) develops the Iowa Assessments—formerly, the Iowa Tests of Basic Skills (ITBS) and the Iowa Tests of Educational Development (ITED). It coordinates statewide testing programs and provides consultation on test use. These activities support a number of unique opportunities for student research.

The Blommers Measurement Resource Library (part of Iowa Testing Programs) provides resources to support the teaching and research needs of faculty, staff, and students, particularly in educational measurement and statistics. Blommers Library contains a collection of materials related to educational testing and assessment as well as an extensive collection of published and unpublished tests.

The Statistics Outreach Center (SOC)—part of Iowa Testing Programs—provides help to College of Education faculty, staff, and students who wish to use quantitative statistical methods in their research.

The Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development provides teacher training and direct services to gifted students. Belin-Blank’s library offers resources in gifted education to University faculty, staff, and students as well as to educators and families throughout the nation. The Institute for Research and Policy on Acceleration was established in 2006.

The Office of Graduate Teaching Excellence (OGTE) enables doctoral students to complement their curriculum and research training with the development of effective teaching skills. The goal is to provide students with the tools and preparation to be effective teachers. Teaching assistants who participate also enhance the quality of undergraduate education at The University of Iowa.

ADMISSION PROCEDURES
Persons interested in educational measurement and statistics may receive a master of arts or a doctor of philosophy degree.

If you wish to apply for admission to the educational measurement and statistics program, you must

1. Submit the graduate school application form. (There is no application form for the department.)
   http://grad.admissions.uiowa.edu/academics/educational-measurement-statistics-ma-or-phd
2. Mail copies of official transcripts of all previous college work—graduate and undergraduate.
3. Send the official report of the Graduate Record Examination (GRE) scores—verbal and quantitative.
4. Include three letters of recommendation.
5. Meet the minimum requirement for grade-point average (GPA).
6. Meet the degree-specific requirements that are listed in the master of arts and in the doctor of philosophy sections that follow.

Admission applications are reviewed as received.

For information concerning the status of your application file, contact the College of Education Office of Student Services (319-335-5359).

MASTER OF ARTS
The master of arts (MA) degree is offered on a nonthesis and a thesis basis.

The nonthesis program is intended for students who seek to qualify for positions that call for competence in educational measurement and research methodology. Such positions are typically found in school districts, state departments of education, test organizations, and research centers.

The purpose of the thesis program is in general the same. However, the program is primarily intended for students who plan to take advanced work in statistical methods or educational measurement at the Ph.D. level.

Admission Requirements

1. Normally if an applicant’s GRE composite score of verbal and quantitative tests is less than 300, the applicant will not be accepted. However, if there is offsetting evidence of superior ability, admission may be granted on a conditional basis.
2. At least one course in college mathematics is highly desirable.
3. Experience as a teacher or a researcher is also highly desirable.
4. Students who want to transfer to educational measurement and statistics from another program within The University of Iowa must submit a statement that explains why they want to change programs and why they think that the educational measurement and statistics program will help them accomplish their educational and vocational goals.

Degree Requirements

To acquire the MA degree (nonthesis or with thesis), students must successfully complete at least 32 semester hours (s.h.) of approved study beyond the bachelor’s degree and take a comprehensive examination.

1. Required Courses
Here is the list of required courses (32 s.h.) for the MA degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:4143 (07P:143)</td>
<td>Introduction to Statistical Methods (or equivalent)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4150 (07P:150)</td>
<td>Introduction to Educational Measurement (or equivalent)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:5165 (07P:165)</td>
<td>Introduction to Program and Project Evaluation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6200 (07P:200)</td>
<td>Educational Psychology (or equivalent)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6220 (07P:220)</td>
<td>Quantitative Educational Research Methodologies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6243 (07P:243)</td>
<td>Intermediate Statistical Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6244 (07P:244)</td>
<td>Correlation and Regression</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6246 (07P:246)</td>
<td>Design of Experiments</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6255 (07P:255)</td>
<td>Construction and Use of Evaluation Instruments</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6257 (07P:257)</td>
<td>Educational Measurement and Evaluation</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Many incoming students will have previously taken courses that are equivalent to PSQF:4143, PSQF:4150, or PSQF:6200. Equivalent courses may take the place of the required courses, subject to the approval of a student’s academic advisor. Students are also required to take either PSQF:6244 or PSQF:6246. Unless students have previously taken a course that is judged by the faculty of educational measurement and statistics to be equivalent, students will take all the other courses listed.

2. Electives and/or Thesis
Students who choose to complete a nonthesis MA degree will take electives. Recommended areas from which electives may be chosen include education, educational psychology, educational measurement, program evaluation, statistical methods, computer programming/data processing, and mathematical statistics.

In addition to electives, students who choose the MA with thesis will take two to four semester hours (2-4 s.h.) of thesis credit. The topic must be in the field of educational measurement, evaluation, or statistical methods and is chosen by the student in consultation with his or her advisor.

3. Comprehensive Examination
When they take the comprehensive examination, students may choose either Option A or Option B.

Option A
Students typically take the six-hour comprehensive examination in two areas:

1. Educational Measurement and Evaluation (3 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:6255 (07P:255)</td>
<td>Construction and Use of Evaluation Instruments</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6257 (07P:257)</td>
<td>Educational Measurement and Evaluation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4150 (07P:150)</td>
<td>Introduction to Educational Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:5165 (07P:165)</td>
<td>Introduction to Program and Project Evaluation</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

OR

2. Educational Statistics and Research Design (3 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:4143 (07P:143)</td>
<td>Introduction to Statistical Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6243 (07P:243)</td>
<td>Intermediate Statistical Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6220 (07P:220)</td>
<td>Quantitative Educational Research Methodologies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6244 (07P:244)</td>
<td>Correlation and Regression</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6246 (07P:246)</td>
<td>Design of Experiments</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
Option B
With the approval of the MA committee, the student may take the examination in three areas:

1. Educational Measurement and Evaluation (2 hours)
   - PSQF:6255 (07P:255) Construction and Use of Evaluation Instruments-3 s.h.
   - PSQF:6257 (07P:257) Educational Measurement and Evaluation-3 s.h.

2. Educational Statistics and Research Design (2 hours)
   - PSQF:4143 (07P:143) Introduction to Statistical Methods-3 s.h.
   - PSQF:6243 (07P:243) Intermediate Statistical Methods-4 s.h.

3. Third area (2 hours)
   - This area is of the student’s choosing with the consent of the student’s academic advisor.
   - Examples include but are not limited to:
     - PSQF:6220 and PSQF:5165
     - PSQF:4150 and PSQF:5165

ONLINE MA PROGRAM (NONTHESIS)
All of the courses for the MA degree in educational measurement and statistics can be completed through web-based course work. The following table shows the typical sequence of online courses that are needed to complete the MA in two years.

**Typical Course Sequence for Online Master’s Degree in Educational Measurement and Statistics**

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Year</strong></td>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>First</td>
<td>PSQF:4143</td>
<td>Introduction to Statistical Methods</td>
<td>PSQF:5165</td>
</tr>
<tr>
<td></td>
<td>PSQF:6200</td>
<td>Educational Psychology</td>
<td>Introduction to Program and Project Evaluation</td>
</tr>
<tr>
<td>Second</td>
<td>PSQF:6246</td>
<td>Design of Experiments</td>
<td>PSQF:6220</td>
</tr>
<tr>
<td></td>
<td>PSQF:6255</td>
<td>Construction and Use of Evaluation Instruments</td>
<td>Quantitative Educational Research Methodologies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PSQF:6250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Computer Packages for Statistical Analysis</td>
</tr>
</tbody>
</table>

In addition to the courses in the table, one elective course or an independent study must be completed in order to fulfill the 32-semester-hour requirement. The elective course can be taken during the fall semester of the first or second year. Examples of online elective courses include PSQF:6205 Design of Instruction, PSQF:6208 Designing Educational Multimedia, PSQF:6215 Web-Based Learning, and PSQF:7204 Foundations of Learning Sciences. The comprehensive examination for online students is taken after completion of the coursework that constitutes the exam.
DOCTOR OF PHILOSOPHY

The purpose of the Ph.D. program is to prepare students for upper-level professional positions in the fields of educational measurement, evaluation, and statistical methods. Such positions are generally found in colleges and universities, state and federal agencies, large public and private school systems, test publishing firms, and research and evaluation centers.

Admissions Requirements

1. Normally if an applicant’s GRE composite score of verbal and quantitative tests is less than 300, the applicant will not be accepted. However, if there is offsetting evidence of superior ability, admission may be granted on a conditional basis.

2. Students who expect to concentrate in statistics should have training in college mathematics through differential and integral calculus or the equivalent.

3. At least one year of professional experience in teaching, research, or related fields is highly desirable.

4. Students who want to transfer to educational measurement and statistics from another graduate program within The University of Iowa must submit a statement that explains why they want to change programs and why they think that the educational measurement and statistics program will help them accomplish their educational and vocational goals.

5. Applicants must earn a master’s degree before being admitted to the Ph.D. program.

Degree Requirements

Students must successfully complete 90 semester hours of approved study beyond the bachelor’s degree. (This includes relevant courses at the master’s level.)

1. Course Requirements

During the first year of graduate study, the student and the advisor jointly plan the student’s program of study. The program will include those courses that are deemed appropriate to the student’s interests and vocational objectives. The typical program will involve advanced work in applied statistics, educational measurement, educational psychology, and research methodology and will include a Ph.D. thesis.

Students who wish to pursue the concentration in educational measurement and statistics with the intention of teaching at the college level are advised to take courses in the mathematical theory of statistics. Students who wish to pursue the concentration in educational measurement and evaluation are advised to take additional courses in educational psychology and educational evaluation. All students are expected to develop familiarity with computer programming techniques and equipment. In addition, candidates who enter the program without having completed a Master of Arts thesis must complete a substitute project before they take the comprehensive examinations.

2. Research Requirement

Students who are admitted before Fall 2015 may choose to use either the current Ph.D. research requirements or the new program research requirements. Students who are admitted in Fall 2015 or later must use the following research requirements.

All students must take PSQF:6220 (07P:220) Quantitative Educational Research Methodologies or a course that is comparable in content coverage and level of rigor such as EALL:5150 (07X:150) Introduction to Educational Research.

In addition, students must complete at least 15 semester hours of quantitative and qualitative courses as follows:

- at least three courses from the quantitative requirements and
- at least two courses from the qualitative requirements.
Quantitative Requirements  
(at least 3 courses; 9 s.h.)

- Students must take PSQF:6243 (07P:243) Intermediate Statistical Methods, or a course comparable in content and coverage and level of rigor.
- In addition, students must take at least two courses from the following list:

  - PSQF:6244 (07P:244) Correlation and Regression-4 s.h.
  - PSQF:6246 (07P:246) Design of Experiments-4 s.h.
  - PSQF:6247 (07P:247) Nonparametric Statistical Methods-3 s.h.
  - PSQF:6249 (07P:249) Factor Analysis and Structural Equation Models-3 s.h.
  - PSQF:6252 (07P:252) Introduction to Multivariate Statistical Methods-3 s.h.
  - EPLS:5176 (07B:176) Demographic Techniques for Educational Research-3 s.h.
  - EPLS:6206 (07B:206) Research Process and Design-3 s.h.
  - EPLS:6209 (07B:209) Survey Research and Design-3 s.h.
  - EPLS:6370 (07B:370) Quantitative Methods for Policy Analysis-3 s.h.

Qualitative Requirements  
(at least 2 courses; 6 s.h.)

- Students must take one of the following courses, or a course comparable in content coverage and level of rigor.

  - PSQF:7331 (07P:331) Seminar: Educational Psychology I—Current Topics (Qualitative Educational Research Methods)-3 s.h.
  - EPLS:7373 (07B:373) Qualitative Research and Design and Methods-3 s.h.
  - EDTL:7070 (07S:370) Introduction to Qualitative Methods in Literacy Research-3 s.h.
  - EDTL:7073 (07S:373) Ethnographic Methods, Theories, and Texts-3 s.h.
  - RCE:7438 (07C:438) Advanced Qualitative Research Seminar in Rehabilitation and Counselor Education-3 s.h.
  - RCE:7444 (07C:444) Qualitative Research in the Multicultural Context-3 s.h.
  - HIST:7199 (016:299) History Workshop:

- In addition, students must take at least one course from the following list:

  - PSQF:5165 (07P:165) Introduction to Program and Project Evaluation-3 s.h.
  - PSQF:6265 (07P:265) Program Evaluation-3 s.h.
  - PSQF:7331 (07P:331) Seminar: Educational Psychology I—Current Topics (Conducting Research Online)-3 s.h.
  - EDTL:6267 (07S:367) Seminar: Current Issues in Art Education (Qualitative Methods)-3 to 4 s.h.
  - EDTL:7071 (07S:371) Critical Discourse Analysis in Educational Research-3 s.h.
  - EDTL:7072 (07S:372) Advanced Methods of Literacy Research: Qualitative Data Analysis and Reporting-3 s.h.
  - EDTL:7073 (07S:373) Ethnographic Methods, Theories, and Texts-3 s.h.
  - EDTL:7410 (07S:310) Mixed Methods Research-3 s.h.
  - EDTL:7751 (07S:451) Advanced Qualitative Data Analysis-3 s.h.
  - EDTL:7774 (07S:374) Qualitative Research with Computer-Aided Qualitative Data Analysis Software-3 s.h.
  - EDTL:7953 (07U:353) Seminar: Single Subject Design Research-3 s.h.
  - EPLS:5195 (07B:195) Research in Cross-Cultural Settings-3 s.h.
  - EPLS:5240 (07B:240) Topics in Education (Introduction to Historical Methodology)-3 s.h.
  - RCE:7438 (07C:438) Advanced Qualitative Research Seminar in Rehabilitation and Counselor Education-3 s.h.
  - RCE:7444 (07C:444) Qualitative Research in the Multicultural Context-3 s.h.
  - HIST:7199 (016:299) History Workshop:
3. Electives
Course work outside the major will be determined according to the student’s interests and goals. Work outside the Program and in other departments of the University is encouraged.

4. Comprehensive Examination
Comprehensive examinations must be successfully completed before the opening of the term in which the candidate expects to receive his or her degree. There are two ways of fulfilling this requirement.

**Regular Procedure**
- Each student must successfully pass a nine-hour comprehensive examination that is divided into three-hour blocks as follows:

<table>
<thead>
<tr>
<th>Examination Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational measurement</td>
<td>3</td>
</tr>
<tr>
<td>Applied statistics</td>
<td>3</td>
</tr>
<tr>
<td>Collateral area</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Each examination area will typically be one in which the candidate has at least nine semester hours of course work or equivalent practical experience.

- The written examinations are followed by a meeting of the candidate with the examining committee. At this meeting, committee members may seek further evidence of the candidate’s command of the field; they may ask questions on matters that are related to the written examinations; or they may examine the candidate’s readiness to complete the remainder of the program.

- A single decision is rendered on all aspects of the comprehensive exams.

**Alternative Procedure**
- The student will complete two of the three comprehensive examinations.
- In lieu of one of the three-hour written examinations noted in the regular procedure, the student may be assigned a project that is approved by his or her committee in advance.

- The project will be one that involves the comprehensive use of analytical, evaluative skills, or research creativity. It will demand the command of skills that are equivalent in sophistication to those that are demonstrated on a written examination.

- The project will be completed before meeting with the committee and must result in a product or document that is available to committee members for their evaluation.

5. Dissertation (12–16 s.h.)
The topic of the dissertation must be in the field of educational measurement, evaluation, or statistical methods and is chosen by the student in consultation with the dissertation director. The student’s committee will have an opportunity to review the topic and to offer suggestions on its implementation at a dissertation prospectus meeting before the student is fully committed to the research.

6. Other
At the end of the student’s first year in the program (approximately 18 semester hours of course work), the student’s advisor will consult with other faculty members to consider the student’s course grades, critical and analytical skills, development during the previous academic year, and promise of continued growth. Students who show insufficient potential or deficiencies that cannot be remedied may be dropped from the program.
**TYPICAL Ph.D. PROGRAMS**
This section illustrates two typical Ph.D. programs: one program with a concentration in **educational measurement and statistics** and the other in **educational measurement and evaluation**. Course work that is common to both concentrations is shown first. Then additional courses under each concentration are shown. Note that current course numbers are followed by legacy course numbers in parentheses.

### Common Course Work

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Statistics</td>
<td></td>
</tr>
<tr>
<td>PSQF:6243</td>
<td></td>
</tr>
<tr>
<td>(07P:243) Intermediate Statistical Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6244</td>
<td></td>
</tr>
<tr>
<td>(07P:244) Correlation and Regression</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6246</td>
<td></td>
</tr>
<tr>
<td>(07P:246) Design of Experiments</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PSQF:6247</td>
<td></td>
</tr>
<tr>
<td>(07P:247) Nonparametric Statistical Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6249</td>
<td></td>
</tr>
<tr>
<td>(07P:249) Factor Analysis and Structural Equation Models</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6252</td>
<td></td>
</tr>
<tr>
<td>(07P:252) Introduction to Multivariate Statistical Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:7375</td>
<td></td>
</tr>
<tr>
<td>(07P:375) Topics in Educational Measurement and Statistics-1–3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

### Educational Measurement

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PSQF:6255</td>
<td></td>
</tr>
<tr>
<td>(07P:255) Construction and Use of Evaluation Instruments</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6257</td>
<td></td>
</tr>
<tr>
<td>(07P:257) Educational Measurement and Evaluation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6258</td>
<td></td>
</tr>
<tr>
<td>(07P:258) Theory and Technique in Educational Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SQF:6259</td>
<td></td>
</tr>
<tr>
<td>(07P:259P) Scaling Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6262</td>
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<tr>
<td>(07P:262) Item Response Theory</td>
<td>3 s.h.</td>
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<tr>
<td>PSQF:7355</td>
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<tr>
<td>(07P:355) Seminar in Educational Measurement and Evaluation-1–3 s.h.</td>
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<tr>
<td>PSQF:7358</td>
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<tr>
<td>(07P:358) Equating and Scaling of Educational Tests</td>
<td>3 s.h.</td>
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<tr>
<td>PSQF:7455</td>
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<td>(07P:455) Generalizability Theory</td>
<td>3 s.h.</td>
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### Educational Psychology, Evaluation, and Research Methodology

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>PSQF:6265</td>
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<tr>
<td>(07P:265) Program Evaluation-3 s.h.</td>
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<td>PSQF:6200</td>
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<td>(07P:200) Educational Psychology-3 s.h.</td>
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<tr>
<td>PSQF:6220</td>
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<tr>
<td>(07P:220) Quantitative Educational Research Methodologies-3 s.h.</td>
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<tr>
<td>PSQF:7331</td>
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<tr>
<td>(07P:331) Seminar in Educational Psychology I Current Topics: Qualitative Educational Research Methodologies-3 s.h.</td>
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### Educational Psychology and Evaluation Concentration

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<td>PSQF:5106</td>
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<tr>
<td>(07P:106) Child Development-3 s.h.</td>
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<td>PSQF:6206</td>
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<tr>
<td>(07P:206) Advanced Child Development-3 s.h.</td>
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<td>PSQF:7350</td>
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<td>(07P:350) Seminar in Evaluation-2–3 s.h.</td>
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<td>PSQF:7450</td>
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<td>(07P:450) Practicum in Program Evaluation-1–3 s.h.</td>
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### Thesis

<table>
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<tr>
<td>PSQF:7493</td>
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<td>(07P:493) Ph.D. Thesis-12 s.h.</td>
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### Educational Measurement and Evaluation Concentration (Mathematical Statistics)

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>STAT:4100</td>
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<tr>
<td>(22S:153) Mathematical Statistics I-3 s.h.</td>
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<tr>
<td>STAT:4101</td>
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<tr>
<td>(22S:154) Mathematical Statistics II-3 s.h.</td>
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<tr>
<td>STAT:4520</td>
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<tr>
<td>(22S:138) Bayesian Statistics-3 s.h. (see also PSQF:4520, 07P:148)</td>
<td></td>
</tr>
</tbody>
</table>
FINANCIAL AID
Submit your application materials to the University by December 1 if you wish to be considered for all possible sources of financial aid for the fall semester of the following year. Several sources of financial aid—including research assistantships, teaching assistantships, and fellowships—are available to educational measurement and statistics students. Two of the research assistantships are

Special Graduate Assistantships (SGAs)
Recipients assist College of Education faculty in research and other scholarly activities in a field related to the faculty member's interests. Students from all College of Education program areas may apply. Assistantships are awarded on a competitive basis.

- Appointments are 50% time for nine months and begin with the start of the academic year.
- To request information, interested students should contact David Henkhaus (david-henkhaus@uiowa.edu, 319-384-2714) or can send a letter to the following address:
  
  Chair, SGA Selection Committee  
  The University of Iowa  
  340 Lindquist Center  
  Iowa City IA 52242-1529

- Applicants must be graduate students in good standing or must qualify for admission as well as satisfy the College of Education requirements for assistantships.
- The deadline for applications is generally in February.

Iowa Testing Programs Research Assistantships
To apply for research assistantships in the Iowa Testing Programs (ITP), send a letter of application to the following:

  Timothy N. Ansley  
  Iowa Testing Programs  
  The University of Iowa  
  320 Lindquist Center  
  Iowa City IA 52242-1529

- This letter should indicate your interest in a research assistantship in ITP and should describe any background, skills, or training that you have that you believe might be especially relevant to ITP.
- The letter should also include your university number (if any); home address and telephone number; e-mail address; university address (if any) and telephone number (if any); degree program; and advisor (if any).
- When research assistantships become available, applications are reviewed by a committee of ITP faculty. This committee makes recommendations to the ITP administrator, who makes final decisions. Applications are kept on file for one year from the date of the application.

Fellowships
In addition to assistantships, several fellowships are available. The University will review the application materials when they are complete and will then send the necessary forms to the applicant.

For general financial aid, contact the following:

Office of Student Financial Aid  
The University of Iowa  
208 Calvin Hall  
Iowa City IA 52242-1315  
319-335-1450  
financial-aid@uiowa.edu  
http://www.uiowa.edu/financial-aid/
FACULTY
Many educational measurement and statistics faculty are affiliated with Iowa Testing Programs. In fact, Lindquist Center—the building that was built in 1973 in which the College of Education is located—is named after E. F. Lindquist who first joined the College as a research assistant in 1925 and who later became the first director of Iowa Testing Programs. He developed the Iowa Tests of Basic Skills and the Iowa Tests of Educational Development (now the Iowa Assessments), and he co-founded the American College Testing (now ACT) tests that are used by students throughout the United States.

Ariel M. Aloe
Ph.D., Florida State University
Assistant Professor
Office: 368 Lindquist Center
(319-335-5566)
ariel-aloe@uiowa.edu
Interest areas: research synthesis, meta-analysis, quantitative methods

Robert D. Ankenmann
Ph.D., University of Pittsburgh
Associate Professor and
Program Coordinator,
Educational Measurement and Statistics
Office: 316 Lindquist Center
(319-335-5420)
robert-ankenmann@uiowa.edu
Interest areas: standardized testing, alternative measurement methods, performance assessment

Timothy N. Ansley
Ph.D., The University of Iowa
Associate Professor and
Chair, Psychological and
Quantitative Foundations
Office: 314 Lindquist Center
(319-335-5411)
timothy-ansley@uiowa.edu
Interest areas: item response theory, evaluation of achievement

Robert L. Brennan
Ed.D., Harvard University
Professor and Co-Director, Center for Advanced Studies in Measurement and Assessment (CASMA)
Office: 210D Lindquist Center
(319-335-5405)
robert-brennan@uiowa.edu
Interest areas: generalizability theory, equating, scaling, classical test theory

Stephen B. Dunbar
Ph.D., University of Illinois
Professor and Director,
Iowa Testing Programs (ITP)
Office: 334A Lindquist Center
(319-335-5561)
steve-dunbar@uiowa.edu
Interest areas: educational measurement and statistics, performance assessment

Michael J. Kolen
Ph.D., The University of Iowa
Professor
Office: 224B1 Lindquist Center
(319-335-6429)
michael-kolen@uiowa.edu
Interest areas: test equating and scaling, test theory, educational measurement

Brandon C. LeBeau
Ph.D., University of Minnesota
Assistant Professor
Office: 200B Lindquist Center
(319-384-0638)
brandon-lebeau@uiowa.edu
Interest areas: linear mixed models, meta-analysis, hierarchical linear models, longitudinal data analysis

Won-Chan Lee
Ph.D., The University of Iowa
Associate Professor and Co-Director, Center for Advanced Studies in Measurement and Assessment (CASMA)
Office: 210E Lindquist Center
(319-335-5546)
won-chan-lee@uiowa.edu
Interest areas: psychometric properties of test scores, test theories, equating and linking

Walter P. Vispoel
Ph.D., University of Illinois
Professor (also affiliated with educational psychology)
Office: 366 Lindquist Center
(319-335-5576)
walter-vispoel@uiowa.edu
Interest areas: computerized adaptive testing, measurement of musical abilities, item response theory, measurement of self-concept

Catherine J. Welch
Ph.D., The University of Iowa
Professor
Office: 320 Lindquist Center
(319-335-6274)
catherine-welch@uiowa.edu
Interest areas: test development and performance assessment

Donald B. Yarbrough
Ph.D., University of Georgia
Professor and Founding Director, Center for Evaluation and Assessment (CEA)
Office: 144 Lindquist Center
(319-335-5567)
d-yarbrough@uiowa.edu
Interest areas: program evaluation methodology, program evaluation in diverse populations

ADJUNCT FACULTY
Deborah Harris
Ph.D., University of Wisconsin
ACT, Inc.
Iowa City, Iowa

E. James Maxey
Ph.D., The University of Iowa
The University of Iowa
Iowa City, Iowa
The University of Iowa Nondiscrimination Statement

The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, creed, color, religion, national origin, age, sex, pregnancy, disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, associational preferences, or any other classification that deprives the person of consideration as an individual. The university also affirms its commitment to providing equal opportunities and equal access to university facilities.

For additional information on nondiscrimination policies, contact the Director, Office of Equal Opportunity and Diversity, the University of Iowa, 202 Jessup Hall, Iowa City, IA 52242-1316, (319) 335-0705 (voice), (319) 335-0697 (TDD), diversity@uiowa.edu.

Source: Operations Manual, Part II, Chap. 6
http://opsmanual.uiowa.edu/community-policies/nondiscrimination-statement
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