TEXAS TECH UNIVERSITY
Department *of* Psychology

Experimental Psychology Programs Handbook

Applied Cognitive Psychology Program
Human Factors Program
Social Psychology Program

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Introduction

The Texas Tech University experimental psychology graduate programs are designed to provide a broad education in psychology, strong training in methodology, and particular expertise in applied cognitive, human factors, or social psychology. The programs aim to prepare people for academic careers and for research positions in a variety of settings. The three programs function as an organized unit within the department and encourage scholarship that cuts across program boundaries.

The experimental psychology faculty is committed to providing the best possible graduate training in an environment in which students and faculty work together, particularly through on-going, active collaboration in research. All programs function on an apprenticeship model in which students work with faculty and become increasingly independent as their research skills develop. The policies and procedures described in this handbook are intended to reflect this model and the values that underlie it.

The mere completion of minimum requirements is not sufficient for success in an advanced degree program or for becoming a professional in the field of psychology. Unlike their undergraduate counterparts, graduate students are expected, as a matter of routine, to take the initiative in pursuing their own professional development. Students should actively seek out opportunities, for example, to read widely in the field; to attend colloquia, job talks, and brown bags; to initiate new research; to attend conferences and conventions and present research; and to apply for support for research and travel.

There is some variation in the time it takes students to complete their graduate programs, but a typical student starting with an undergraduate degree in psychology can expect that it will take approximately 1½-2 years to finish a master's degree and 4-5 years to finish a doctoral degree. The program is designed for full-time students only. We recognize that most students need financial support that will involve part-time employment in some capacity while enrolled. In most cases, support is provided by the department. However, if the department cannot provide financial support, students seeking support elsewhere should find employment whenever possible in settings that complement the graduate program.

If you have any questions about policies and procedures that are unanswered or unclear in this handbook, please consult with your advisor or the program director. Fellow students, faculty in other programs, department staff, and the Graduate School, to name a few, are not reliable sources of information about the graduate programs in experimental psychology. We are dedicated to facilitating your success in our graduate programs and beyond, and we hope that this handbook, in conjunction with the Graduate Student Handbook in Psychology and regular discussions with your advisor, will ensure smooth sailing through graduate school.

Practical Issues

Advisors

Each new experimental psychology students will be assigned a preliminary advisor by the program director on the basis of the student's expressed area of interest. This faculty member will serve as the student's advisor until the student selects a permanent advisor.

The permanent advisor is chosen by the student with the agreement of the advisor and is usually the faculty member who will chair the student's dissertation committee. Students must email the program director when they have changed advisors; cc the previous and new advisors. In the rare case in which a student's research advisor is not a member of any of the experimental programs, an academic advisor from one of the experimental programs will also be assigned.

Each semester, students should confer with their academic advisors to plan the next semester's schedule. Students should also keep their advisors up-to-date on all academic activities. Copies of all significant records pertaining to each student's program are kept in the student's file in the main psychology office. Students, their advisors, and the program director are responsible for keeping the file current.

Students are expected to engage in research with at least one other faculty member during their course of study. This research requirement can be satisfied in a variety of ways. Some examples include completing an internship or enrolling in PSY 7000 or working as a research assistant with a faculty member other than the advisor. Other arrangements are possible with the consent of the advisor and the program director.

Registration and Enrollment

Students should know that a primary issue regarding enrollment and credit hours is the accrual of doctoral credit hours subsidized by the state. Experimental psychology students are allowed to accrue no more than 99 doctoral credit hours (see Department Handbook for details).

Definitions:

1. The term "all requirements" in this section means as follows: i) The student has completed (including completing any incomplete grades) all required departmental and program course work, as well as any other courses included in the student's "Program for the Doctoral Degree." ii) The student has passed the qualifying exam and has been admitted to doctoral candidacy. iii) The student has a signed dissertation proposal.

2. "Successful dissertation defense" means the student has passed the oral defense. Further revisions of the dissertation document may (and typically are) required by the committee before the dissertation document is finally accepted by the committee. All revisions required by the committee at defense must be completed and approved by the committee prior to submission of the document to the Graduate School.

3. "Final acceptance" of the dissertation means approval of the document with any required revisions by both the committee and the Graduate School.

Students who have a signed dissertation proposal, have scheduled a defense date, and have completed all requirements except the defense and/or final acceptance of the dissertation need to register

1. Long semesters prior to and including the semester of dissertation defense -- the minimum enrollment is 6 credits each long semester (i.e., Fall, Spring).

2. Long semesters following successful dissertation defense but before final acceptance of the dissertation – the minimum enrollment is 3 dissertation credits (PSY 8000) each long semester.

3. Before final acceptance of the dissertation document by the Graduate School, the enrollment during the summer sessions (either SSI, SSII, or combined) is a **minimum** of 3 dissertation credit hours (PSY 8000). Students who defend during the summer should make sure that the minimum 2 hours total credits with each non-chair committee member is satisfied during or prior to summer sessions (see subsequent section entitled **Research Coursework**). Note: The experimental programs may impose enrollment requirements above this minimum.

The Graduate School requires that students who have completed all requirements including final acceptance of the dissertation should enroll for a minimum of one hour (typically of PSY 8000) through the semester of graduation.

Note: A student may petition the department's executive committee to reduce enrollment requirements by emailing the program director and copying their advisor on this email. The petition should make clear the basis of the request, the student's current academic situation (e.g., successfully defended dissertation proposal and currently collecting data), and the length of the request (e.g., Summer 1, Fall).

Performance Requirements

In the experimental programs, a graduate student must earn a B- or better in every required course.

Course Withdrawals

Students must obtain written permission from their advisor to withdraw from a course after the 12^{th} class day of the semester. If necessary, additional credits (e.g., PSY 7000) should be added to maintain full enrollment and full-time commitment to the program, and eligibility for fellowships and assistantships. If additional enrollment is not possible and the student's funding requires full-time enrollment, a memo requesting an exception to Graduate School minimum enrollment requirements should be submitted for signatures to the advisor and the program director, who will forward it to the Graduate School.

The Master's Degree (M.A.)

Terminal M.A. Requirements

Enrollment and registration requirements (see the Registration and Enrollment section of this handbook) apply to master's students. Unless a leave of absence is granted by the experimental psychology faculty, students are expected to enroll in a combined minimum of six hours across the two summer sessions.

A formal thesis is optional. When these requirements are fulfilled, students should request by email that the program director send a statement to the Graduate School indicating that the comprehensive examination (second-year project) has been passed. The request should be timed to allow the program director's notification to reach the Graduate School before the deadline that is announced each semester, typically about six weeks before graduation.

M.A. Curriculum

The terminal master's degree requires a total of 36 credit hours. Minimum coursework requirements are:

Statistics (6 hours)
PSY 5480 Experimental Design
PSY 5447 Advanced Correlational Methods and Factor Analysis

Experimental Core (6 hours)
Two courses that fulfill any two of the cognitive, human factors, social or psychobiological core requirement. The list of eligible courses is provided in this handbook.

Experimental/Statistics Electives (12 hours)
4 additional courses that are either (a) courses taught by experimental faculty, or (b) statistics courses.

Free Electives (6 hours)
2 graduate level course in any area of psychology or any other field.

Research (6 hours)
A minimum of 6 hours of enrollment in PSY 7000. Even after meeting the PSY 7000 requirement, students must be continuously involved in research.

M.A. Curriculum (Human Factors)

The curriculum for the master's degree in human factors also requires 36 hours, but it is more specialized than the general terminal master's curriculum. Minimum coursework requirements are below:

Statistics (6 hours)
PSY 5480 Experimental Design
PSY 5447 Advanced Correlational Methods and Factor Analysis

Department Core (6 hours)
Two courses that fulfill any two of the cognitive, social, psychobiological or applications core requirements. The list of eligible courses is provided earlier in this handbook. Note that IE 5303 (Work Physiology) fulfills the Biological Bases core. Students who have taken this course only need to take one additional department core course.

Experimental/Statistics Electives (12 hours)
Four courses that are either (a) courses taught by experimental faculty, or (b) statistics courses. Two of these four courses must be:

PSY 5370 Human Factors Psychology
PSY 5372 Human Factors Methodology

Industrial Engineering Requirements (6 hours)
Students must complete:

IE 5303 (Work Physiology) or IE 5301 (Human Factors in Ergonomics and Design), AND
One of the following: IE 5301 (if not selected from above options), 5309, 5302, 5303, 5306, 5308, 5329, or 6304

Research (6 hours)
Six hours of enrollment in PSY 7000. Research experience is considered of primary importance and students are expected to be engaged in research continuously throughout the year. The human factors program utilizes an apprenticeship model in which students become involved in their advisor's ongoing research. The research typically focuses on theoretical issues in experimental psychology that have implications for human factors applications.

Quantitative and Computer Skills

Students must acquire quantitative skills that are appropriate to their course of study. This may be achieved in various ways such as coursework, research experiences, and independent study. Examples include statistics, linear algebra, trigonometry, calculus, or computational modeling.

Students also must acquire computer skills that are appropriate to their course of study. This may be achieved in various ways such as coursework, research experiences, and independent study. Examples include statistical software packages (SPSS, SAS), prototyping and simulation tools, MATLAB, JAVA, Visual Basic, and C++.

Mastery of a higher-level programming language and mathematics through calculus are strongly recommended.

Communication Skills

Students must acquire experiences to develop their oral and written communication skills. This is achieved by the second-year project requirement for all MA and PhD students and by the dissertation proposal and defense for PhD students. In addition, in the weekly human-factors chat, all students are responsible for one time-period per year.

Teamwork Experience

Students are exposed to multidisciplinary team experiences in various ways such as coursework (Human Factors, Human Factors Methodology, Human-Computer Interaction), the HFES TTU Student Chapter, and practical experiences such as internships. Examples include collaborative class assignments and projects, feedback from fellow students on class presentations, and students working together on practical problems.

Non-Terminal M.A. Requirements

See the Department of Psychology Graduate Student Handbook for information about non-terminal M.A. degrees.

The Doctoral Degree (Ph.D.)

Experimental Psychology Program Course Requirements

In collaboration with their advisors, each student will identify any four courses that serve his or her goal of becoming an applied cognitive, human factors, or social psychologist. These courses will typically be experimental psychology courses, but they can be from any area of psychology or any other field.

Statistics (3 graduate-level courses)

Basic graduate statistics courses (both required)

- PSY 5480 Experimental Design
- PSY 5447 Advanced Correlational Methods and Factor Analysis

Advanced/specialized courses (choose one)

- PSY 5348 Advanced Multivariate Analysis for Psychologists
- PSY 5360 Structural Equation Modeling for Psychologists
- PSY 5367 Analysis of Repeated Measures and Intensive Longitudinal Designs

Department Core (4 courses)

Cognitive Bases of Behavior (choose one)

- PSY 5356 Seminar in Cognition
- PSY 5354 Seminar in Perception

Biological Bases of Behavior (choose one)

- PSY 5301 Biological Bases of Behavior and Psychological Function
- PSY 5351 Psychophysiology
- PSY 5382 Psychopharmacology of Psychoactive Drugs
- IE 5303 Work Physiology

Social Bases of Behavior (choose one)

- PSY 5328: Seminar in Social Psychology
- PSY 5330 Attitudes and Attitude Change
- PSY 5340 Automaticity and Control in Social Behavior

Applications (i.e., Human Factors; choose one)

- PSY 5370: Human Factors Psychology
- PSY 5372 Human Factors Methods
- PSY 5373 Cognitive Ergonomics

Specialization Courses (4 courses)

Four courses from the student's area of specialization that are approved by the student's advisor

Experimental Electives (3 courses)

An additional 3 courses taught by experimental psychology faculty, which may include further work in the specialization

Free Elective (1 course)

An additional course in any area of psychology or any other field

Colloquium in the Teaching of Psychology

Students must take the lecture (1 unit) portion of PSY 5101 (Colloquium in the Teaching of Psychology) before their second year in the program, unless they can verify equivalent prior training in teaching. Students can include 5101 on their degree plan if they also take the practicum (2 unit) portion of PSY 5101.

Industrial Engineering (IE) courses (required for Human Factors students only)

Human Factors students must complete:

IE 5303 (Work Physiology) or IE 5301 (Human Factors in Ergonomics and Design), AND

One of the following: IE 5301 (if not selected from above options), 5309, 5302, 5303, 5306, 5308, 5329, or 6304

Note that IE courses can fulfill specialization requirements.

Research Coursework (i.e., PSY 7000/8000)

Pre-Dissertation Research

In addition to continuous involvement in research is expected as evidenced by (a) a minimum of 15 hours of enrollment in PSY 7000, and (b) enrollment in PSY 7000 for 3 credit hours during each long semester and one summer term each year.

Dissertation Research

A minimum of 12 hours of enrollment in PSY 8000. Continuous enrollment of at least 3 hours of PSY 8000 with the dissertation chair beginning at least in the semester in which the dissertation is proposed. Students are required to sign up for a minimum of 2 credits with every other committee member during the course of the dissertation, normally in the semesters of proposal and defense.

Qualifying Examination

To be eligible to take the qualifying examination, students must have completed their second-year project. They should also have completed all coursework in the specialization and all but a handful of other courses listed on the degree plan.

The doctoral qualifying examination will consist of an essay exam of at least six hours duration. It will typically be constructed and graded by at least three faculty members selected by the faculty of the student's program. The examination will be constructed to allow the student some degree of freedom in selecting which questions to answer from among a set of questions presented on the examination. The examination requires a synthesis and application of

knowledge acquired during the course of study for the doctoral degree; consequently, satisfactory performance in course work does not necessarily guarantee successful performance on the qualifying examination.

Qualifying examinations are ordinarily given in early fall and late spring (September and May). Well before the proposed date of the qualifying examination, students should notify the program director using the Qualifying Exam Checklist, which can be obtained from the program director. The student's doctoral degree plan should be revised at this time to reflect the courses that were actually taken and the current dissertation committee. Forms for (a) adding and deleting courses on the degree plan and (b) changing committee membership are available from the Graduate School's website. Once the program director has verified the relevant items on the checklist, the student will be given permission to proceed with the examination or informed of any remaining requirements.

Following the exam, the chair of the qualifying exam committee will complete the Qualifying Exam Results form, http://www.depts.ttu.edu/psy/graduate_programs/counseling/files/counseling_forms/5th%20Heading/Subfolder%202/Doctoral%20Degree/Admission%20to%20Candidacy%20PH.D.%20form.pdf, and put it in the student's department file. The chair will also provide a copy to the program director, who will email it to the Graduate School.

Passing the qualifying exam is required for admission to candidacy by the Graduate School. Other requirements for admission to candidacy are given in the graduate catalog.

Qualifying examination in Social Psychology. The purpose of the examination is to allow doctoral students to demonstrate a comprehensive knowledge of the field of social psychology, and to show an ability to deal with issues raised by the theory, data, and methods of the field. A bibliography is provided. It contains specific items that are considered an essential foundation of a comprehensive survey of the field as represented in this department. The remaining readings are meant to orient the students to important areas with which they will be variously familiar. While preparing for the examination, students are encouraged to help themselves conceptualize the material by submitting potential exam questions to the faculty. Some of these questions may appear on the examination.

The examination in social psychology is administered on two consecutive days with one 3-hour session on each day. Day 1 consists of five pairs of short-response questions, and the student must choose one question from each pair to be answered in two pages maximum. For Day 2, students are given three long-response questions, two of which are to be answered during the three-hour session. At the end of Day 2, students are given four questions, two of which are to be answered at home and returned within four days. Sit-down portions of the exam are closed-book and closed- note.

Grading. Each question will be graded by two committee members, one of whom was the author of the question, using the 10-point scale below. The longer questions from Day 2 and the take-home questions will be weighted by 3. Scoring is as follows: 9-10, honors; 7-8, pass; 5-6 fail; 1-4, no response or equivalent. To pass the exam, students must

achieve a mean score of at least 7.0.

Qualifying examination in Applied Cognitive Psychology. The student and the Applied Cognitive faculty who is directing the qualifying exam will jointly select members of an examining committee, which will include at least two members of the Applied Cognitive faculty. Each member of a student's examination committee should speak to the student to give him/her a sense of the breadth of coverage and subject matter to be addressed by that faculty member on the examination. Members may wish to give the student a specific reading list.

The examination consists of two parts. The first part of the examination will consist of two sections on cognitive psychology contributed by the applied cognitive faculty on the committee. All students taking the examination from a particular committee will receive the same set of questions. The second part of the examination will consist of two other sections for each student as determined by each student's committee.

Each section should be constructed in such a manner as to allow the student choices among questions or options appropriate for the allowed time period, with an indication of which questions, if any, carry more weight. If appropriate, some suggestion of the time to spend on each question will be provided. The exam will be administered over two days, in four three-hour blocks. This time frame can be modified through approval of the full committee and the director of the experimental program, given appropriate justification.

Grading. Committee members will grade their own sections. The grade options for each section will be Pass, Marginal Pass, Marginal Fail, and Fail. At their discretion, committee members may confer with other committee members before assigning a grade.

Students who receive at least a grade of Marginal Pass for each section will pass the overall exam. For up to any two (but not more) sections on which the student receives a Marginal Fail, or if the student receives one Marginal Fail and one Fail, the committee as a whole will determine an appropriate form of further inquiry to be certain of the student's knowledge of those areas, and no grade for the overall exam will be submitted until that inquiry (expeditiously conducted) is concluded and a final determination of the grade for the sections in question are determined. On the other hand, students receiving a Fail grade on two or more sections, or three or more Marginal Fails, will automatically fail the overall exam.

A student who does not pass the qualifying exam will be permitted to retake the Fail and Marginal Fail sections once after a time lapse of four months but not more than twelve months, during a regularly scheduled qualifying exam. The student will need a grade of Pass on all retaken sections in order to pass the exam as a whole.

Qualifying examination in Human Factors. Successful completion of the qualifying examination in Human Factors Psychology documents that the student has 1) mastered the foundations of the field, and 2) become an expert in one of the field's identifiable sub-specialties. Ordinarily, the qualifying examination can be taken three times per year, during the last week of September, the last week in January, or the last week in May. The exact dates will be determined by the HF faculty. The qualifying examination has three sections.

Sections.

Section 1. Fundamentals of Human Factors. This section is a written test of the student's knowledge of the foundations of Human Factors Psychology. It examines whether the student has mastered the fundamentals that every human factors psychologists should know.

Section 2. Research Specialty Area. This section is a written test of students' knowledge in their area of expertise. It assesses whether students have attained a sufficient degree of expertise in their chosen specialty area.

Section 3. Applying Knowledge from the Specialty Area. This is a paper in which the student demonstrates how knowledge from the specialty area can be used to address an applied problem. The problem must be defined narrowly, and must relate to the student's chosen area of expertise.

Grading.

1. Each faculty member will grade the set of questions he/she contributed, on the following 5-point scale: 4 = above average pass, 3 = average pass, 2 = marginal pass, 1 = marginal fail, 0 = definite fail.
2. After all faculty members have completed their grading, they will meet to discuss the results.
3. To pass the qualifying examination, the student must pass sections 1, 2, and 3.
4. To pass section 1, the student must pass all subsections (i.e., perception, human factors, human factors methods, and cognitive ergonomics).
    a. If the student does not pass two or more of the subsections of Section 1, the student must retake section 1 in its entirety after waiting four months, at the next regularly scheduled offering of the exam.
    b. If the student does not pass one of the subsections of Section 1, the student must complete remedial work which, at the committee's discretion, could be open book, closed book, or both. The exact nature of the remedial work will take into account the strengths and weaknesses of the particular student as demonstrated on the original examination. Thus, students may differ in the format and nature of remedial work.

5. The student must pass each part of the remediation in order to pass qualifying examinations. If the student fails any part of the remediation, he or she must retake the failed section in its entirety after waiting four months, at its next regularly scheduled offering. If the student fails at this point, he or she will be considered as having failed qualifying examinations for the second time and will not be permitted to continue in the program.