

**UNIVERSITY OF ARIZONA
DEPARTMENT OF PSYCHOLOGY**

GRADUATE PROGRAM REQUIREMENTS AND POLICIES

UPDATED APRIL, 2018

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Ph.D. Program Five Year Plan

Graduate students are expected to complete graduate studies in Psychology within 5 years (6 years for those students in the Clinical program). The suggested time line below is approximate and flexible. Your advisor will assist you in constructing a plan of study that is appropriate for your particular program and training needs. The specific forms that need to be submitted are also listed here. Further details on requirements for the Master's, comprehensive examination, Ph.D. dissertation, and specific program requirements can be found by clicking on the links to the right of [this page](#).
(psychology.arizona.edu/academics/phd-program-requirements-and-policies)

1st Year: Master's Proposal

- Complete relevant ethics training
- Meet with your advisor to outline a plan of study.
- Begin to explore research ideas with your advisor.
- Form your Master's committee.
- Prepare a proposal for your Master's and have it approved by the committee.
- Submit the Master's Proposal form (Form #1) to the Graduate Coordinator and complete the Master's Plan of Study via GradPath.

2nd Year: Master's Completion

- Carry out your Master's research project and complete all Master's course requirements.
- Write up Master's thesis and submit it to the Master's committee for approval.
- Complete the Master's Completion of Degree Requirements via GradPath and submit the Thesis Acceptance form (Form #2) to the Graduate Coordinator.

3rd Year: Comprehensive Examination

- Meet with your advisor: plan the exam and complete the Doctoral Plan of Study via GradPath.
- Form your comprehensive examination committee and submit the committee names via GradPath for approval.
- Meet with your committee members to approve the plan of study and decide on the examination format.
- Submit the Written Comprehensive Proposal form (Form #3) to the Graduate Coordinator.
- Complete the written comprehensive exam or write a comprehensive examination paper.
- After receiving word that the written exam has been passed, submit the Written Comprehensives Requirements form (Form #4) to the Graduate Coordinator.
- Schedule the oral examination with your committee members and submit the Announcement of Doctoral Comprehensive Exam via GradPath. When the oral examination is completed, the committee chair will submit the results via GradPath.

4th Year: Doctoral Dissertation Proposal

- In consultation with your advisor, plan your dissertation research.
- Form a dissertation committee, and submit the Doctoral Dissertation Committee Appointment form via GradPath no later than six months prior to the dissertation defense.
- Prepare a written proposal for your dissertation research and have it approved by your committee.
- Submit the Doctoral Dissertation Proposal form (Form #5) to the Graduate Coordinator.
- Carry out your dissertation research.

5th Year: Doctoral Dissertation Defense

- Complete dissertation research and all doctoral course requirements.
- Write up the dissertation research and submit it to your committee at least two weeks prior to the dissertation defense.
- Schedule the dissertation defense and submit the Announcement of Final Oral Defense form via GradPath.
- Complete the dissertation defense and make final revisions to the document before submitting it to the Graduate College.

NOTE: Clinical students will apply for their internship year after completion of the comprehensive examination and the dissertation proposal. See the Clinical Graduate Student Handbook for more details.

Departmental Curriculum Requirements

A graduate student's curriculum comprises the following requirements:

- a set of departmental core requirements, which include departmental required courses
- additional courses in the major program
- courses in a minor area
- an empirical Master's project/thesis
- written and oral comprehensive examinations;
- an empirical Doctoral dissertation.

Required Courses

Departmental required courses include:

- PSYC 500A: Issues of Psychological Theory and Research
- Three graduate level courses in Statistics and/or Research Methods beginning with an overview course (PSY 510). Other courses may include PSY 507a, 507b, and 507c, taken with their required lab sections (PSYC 597a, 597b, 597c). Please note that these 597 lab sections are required with their respective 507 course and will not count as a separate course to meet the 3-course requirement. Other graduate courses in research methods or statistics offered by the Psychology Department or another department may count towards the requirement if approved by the student's advisor and the Director of Graduate Studies. An independent study course that focuses on specialized statistical methods and supervised by an instructor with statistical expertise may also count towards the statistics requirement, with a course outline approved by the student's advisor. The Director of Graduate Studies can provide a list of current course offerings in other departments. Recent offerings include :ANTH696D, R Programming for Data Analysis and Visualization; FSHD 537, Introduction to Applied Statistical Analysis; FSHD 617C, Multilevel Modeling (requires FHSD 537A/L as prerequisite); FSHD 617A, Structural Equation Modeling; EDP641, Advanced Linear Methods; EDP646a, Multivariate Statistics. See [Appendix B](#) for more information about graduate course options in statistics, or see the Graduate Training in Applied Statistics (GTAS) homepage for the most current information: <https://gtas.arizona.edu>
- Psy 596T: Teaching of Psychology. This course is a mandatory prerequisite for any student who wishes to teach in winter/summer sessions. Other 3-credit graduate level teaching courses offered through the Office of Instruction and Assessment may be substituted, with prior permission from Dr. Julie Feldman.

Only courses with earned grades of "B" or "A" or "P" or "S" are allowed to count towards degree requirements. These grades reflect adequate or excellent mastery of the course content. Should a student earn a grade of "C" or below, the student has the following options: 1) retake the course to earn a grade better than "C"; 2) Remove the course from the plan of study in the case that it was not a core required course, but rather an elective course; or, 3) arrange an alternative method to demonstrate mastery that must be approved by the student's advisor and program director. Such alternative methods might include retaking an exam, completing a limited independent study with the instructor of the course, or focusing on the specific content within the comprehensive exam.

Transfer Credits

Students accepted into the Ph.D. program who have completed graduate level courses may be able to obtain credit for these courses in the Ph.D. program. Students with a Master's degree from another institution may transfer up to 30 units to the Ph.D. program. Students who have completed some graduate courses elsewhere may transfer in up to 30 units. Transfer courses that will be used to count in place of a program requirement must be deemed equivalent to courses currently offered in the Psychology department. In order to qualify as a transfer course, students should provide a course syllabus to the faculty member currently teaching the equivalent course for consideration. If the faculty member considers the coursework equivalent, then she/he will contact the Program Director and the Director of Graduate Studies. Transfer courses must be approved by the area Program Director and the

Director of Graduate Studies, and ultimately approval is up to the Graduate College. The Graduate Coordinator can provide students with more details on transfer courses. Courses taken before matriculating in the Ph.D. program can only be transferred during the first year of the graduate program. Clinical students should follow the specific instructions within the clinical handbook, which in addition to the procedures detailed here, require contacting the Director of Graduate Studies before starting this process.

The Graduate Minor Area

Courses in a minor area may be chosen from the Psychology departmental graduate track and minor options, or from or courses offered by Psychology or other departments or colleges at the University. A graduate minor in Psychology consists of 9 units and should be selected in consultation with your advisor. It is recommended that nine units be taken in psychology or from courses that are cross-listed to psychology. Courses from other departments may be added to the student's minor program if approved by the advisor and the chair of the student's minor committee.

A minor area completed through a department other than Psychology must meet the specific minor requirements defined by the outside department. The outside department (or interdisciplinary program) will specify the number of credits required to fulfill their minor requirements, and this number sometimes exceeds nine units. Check the website of the specific outside department for requirements.

In addition to an individualized minor, students may wish to select from one of our three track and minor options; health psychology (all programs), neuropsychology (Clinical), and ethology and evolutionary psychology (CNS). Information concerning these track and minor options is available within the Department of Psychology webpage: <http://psychology.arizona.edu/academics/phd-program-requirements-and-policies>

PLEASE NOTE: Courses that fulfill departmental requirements may not be counted as fulfilling the minor requirement. For example, students wishing to do a graduate minor in Psychology with an emphasis in statistics must complete 3 statistics courses beyond the basic three-course departmental statistics requirement.

Master's Degree Requirements

Students must complete 30 course units that must include between 1 and 6 Master's project units (Psy 909) or Master's thesis units (Psy 910).

- The Master's research project (Psy 909) may be a focused empirical study or may utilize extant data. The Master's project committee will include two faculty, the primary supervisor and one other faculty member within Psychology. Students completing the Master's research project must enroll in at least one credit of Psy 909 (Master's Report).
- If a student wishes to archive their Master's research, they may enroll in Psy 910 (Master's Thesis) in lieu of Psy 909. The Master's thesis requires three committee members.
- The Master's proposal should be reviewed and approved by the Master's committee members. This process does not require a formal proposal meeting, although a meeting is highly recommended. The proposal should be completed prior to the beginning of the fall semester of the second year.
- The written Master's project report (or thesis) should be completed and approved by the committee prior to the beginning of the fall semester of the third year. There is no requirement for a formal Master's defense, although a meeting is highly recommended. All revisions to the Master's document should be completed prior to the beginning of the fall semester in the third year.
- In addition to the written Masters' report, all second year students will present their masters research at a research forum held toward the end of the spring semester (late April or early May). Students can elect to present their project as a poster or an oral presentation. If data collection or analysis are not complete by the time of the research forum, second year

students will nonetheless present the background, hypotheses, methods, and implications of their Master's project.

- Students who have not completed their Master's thesis by the beginning of the fall semester of their third year may be placed on provisional status, with the stipulation that they should complete both the Master's thesis and their comprehensive exams by the beginning of the fourth year in the program. Please see the information on Graduate Student Evaluations below for more details.
- Students entering the graduate program with a Master's degree from another institution may petition for that thesis to meet our Master's Thesis requirements. To receive credit, the student should provide a copy of the completed thesis to their advisor and one other faculty member in Psychology. The two faculty members will read the thesis and decide whether it meets the Psychology department standards. If approved by both faculty, the advisor will inform the Graduate Coordinator that the student has fulfilled the thesis requirement. The student must still participate in the research forum during their second year, presenting work performed while at the University of Arizona.

Comprehensive Examination

The Comprehensive examination is a requirement of the Graduate College and must be completed before admission to candidacy for the Ph.D. degree. The Comprehensive requirement should normally be undertaken in the third year of residency, but cannot be completed until the Masters thesis has been approved. The Comprehensive requirement must be completed before the Doctoral dissertation proposal can be submitted. The Comprehensive examination process entails a written examination, covering the major and minor fields of study, followed by an oral examination of at least one hour and no more than three hours in length. The Comprehensive examination requires the student to display a broad knowledge of the field as well as depth of knowledge in their area(s) of specialization.

The written Comprehensive examination in the Psychology Department can be fulfilled in one of two ways: either by the preparation of one or two papers (one in the major and one in the minor) in the scope and style of Psychological Bulletin or Psychological Review, OR by the completion of a set of examination questions prepared by the student's Comprehensive committee. Both types of examinations require the student to demonstrate breadth of knowledge in the field of psychology and depth of knowledge in their area(s) of specialization. The exact format of the examination questions is determined by the advisor and the Comprehensive committee but should follow the guidelines described below.

Steps to be taken to complete the Comprehensive requirement:

- Students should begin discussions with their major advisor concerning the breadth of knowledge that is expected for the Comprehensive exam. The advisor should recommend suitable readings and coursework that are designed to meet the breadth requirement. At the same time, the students should also discuss with their advisor the research areas that will constitute the particular area(s) of specialization. These discussions should begin early in a graduate student's career, preferably during the first year.
- After completion of the Master's requirements, students, in consultation with their major advisor, should form a committee for the Comprehensive examination. The Comprehensive committee must consist of four members, three in the major area and one in the minor area. This Comprehensive committee need not include the same members as the Dissertation committee. Three of the four members should be within the Department of Psychology. Exceptions can be approved by the advisor and the Program Director.
- Students should arrange to meet with each Comprehensive committee member to discuss the content of the Comprehensive examination. At this meeting, students should seek confirmation of their expectations with respect to the breadth and depth of knowledge required in their paper or exam and the specific content areas that will be covered. Students should request from each committee member suggestions for coursework and a list of readings that are appropriate to the goals of the Comprehensive examination.
- If students elect to complete a written exam, the exam may be in-house or take-home. In-house exams typically allow for 3 hours of exam time per examiner, which may be spread

over days (usually 2 days). Take-home exams may take up to one day per examiner. The specific format will be approved by the Comprehensive committee.

- The comprehensive paper or written examination answers should be provided to all members of the committee, who will submit their pass/fail/abstain vote directly to the student's advisor. Only one failing vote or abstention is allowed. Two or more failing votes or abstentions constitute a failed exam. A failed written examination may be re-taken once at the discretion of the committee. A failed comprehensive paper may likewise be revised once at the discretion of the committee.
- When the written portion of the Comprehensive examination has been passed, the student should schedule three hours for the oral part of the examination with the committee members. The oral exam must be at least one hour and no more than three hours in length.
- All committee members must be in attendance at the oral exam. If more than one member of the committee or the student is participating remotely for the exam (via Skype or teleconference), please inform the Graduate Coordinator prior to the exam. An oral exam with more than one person participating remotely must be approved by the Director of Graduate Studies.
- Questions during the oral exam cannot focus specifically or solely on the areas covered in the written exam or the comprehensive paper. Instead, students will be questioned broadly about their knowledge of psychology in general as well as their area(s) of specialization. The student will not be allowed any external aids during the Comprehensive oral examination.
- At the conclusion of the oral examination, Committee members will provide a confidential pass/fail/abstain vote using ballots obtained from the Graduate Coordinator. The committee members should consider the student's competency on both the oral examination and the written examination or comprehensive paper in casting their vote. Only one failing vote or abstention is allowed. Two or more failing votes or abstentions constitutes a failed oral examination. A failed oral examination may be re-taken once at the discretion of the committee within 3 months of the failed oral exam.
- When the oral examination is completed successfully, the committee chair will return the ballots to the Graduate Coordinator. The committee chair is responsible for initiating the Results of Oral Comprehensive Exam form in GradPath. The chair will receive an email reminder, with a link in the email to the form, to submit the results as soon as the oral Comprehensive examination is completed. Failed exams must also be reported via GradPath, and a new date for the oral examination selected, should the committee elect to allow the student to re-take the oral examination.

Ph.D. Requirements and Doctoral Dissertation

Students must complete a total of 63 units of coursework for the Ph.D. These include 36 units of coursework within their major area, 9 units of coursework to fulfill a minor area in Psychology (for details, see the section on the minor requirements), and 18 dissertation units. Note that up to 30 units of Master's courses passed with a grade of "A" or "B", and thus not including the thesis or project units, can be transferred to the Ph.D. and can serve as either major or minor coursework.

All Ph.D. candidates, having successfully completed the Master's degree and the Comprehensive examination, must complete a dissertation that meets accepted standards of scholarship and that demonstrates the candidate's ability to conduct original research.

Steps to be taken to complete the Doctoral dissertation:

- In consultation with the advisor, students should select a Dissertation committee. The Graduate College requires a minimum of three members, all of whom must be University of Arizona tenured or tenure-track. A fourth member may be tenured or tenure-track, or a special approved member. Special members must be pre-approved by the Head of Psychology and the Dean of the Graduate College. Any members beyond the fourth can also be tenured or tenure-track, or special approved members. All dissertation committee members are expected to attend the final defense. If any members will be participating by Skype or speaker phone they must attend the whole. Please notify the Graduate Coordinator if this should be the case.

Students in clinical must have 4 committee members, three of whom are core clinical faculty, unless an exception is approved by the Clinical Training Committee.

- Students should develop a proposal for their dissertation research in consultation with their advisor and the Dissertation committee members. The written proposal should be similar to a grant proposal, including background literature, the specific aims of the project, the methods, any preliminary results, and the scope of the intended work. Once the proposal is submitted to the committee, the student will meet with the committee to formally present the proposal and obtain feedback.
- It is highly recommended that student obtain approval of their dissertation proposal from all committee members BEFORE they engage in extensive research projects. The committee is not bound to accept research projects simply because they have already been completed, if they feel that the research project does not meet accepted standards of scholarship.
- A dissertation may include already-published work deriving from work done while a graduate student at the University of Arizona and where the student is first-author. Publications may also be included where the student is not the first author, if a substantial amount of the work in the publication was carried out by the student. Published papers are appended to the dissertation in their published format. A “portfolio” of published papers is acceptable as the dissertation. The portfolio must include an introductory chapter describing the overarching themes of the work, and a final discussion section that integrates the various published papers included in the portfolio. Alternatively, the dissertation may include a combination of chapters describing unpublished research and published journal articles.
- After completing the research projects outlined in the proposal, the dissertation document should be written following the specific guidelines and formatting provided by the Graduate College.
- The dissertation document should be submitted to committee members no later than two weeks prior to the defense. Once the committee has had sufficient time to read the document, the student should schedule the defense with the committee members.
- Note that all members of the committee must be present at the defense. If a committee member will be present via Skype or via teleconference, they are required to be present continually for the entire presentation and discussion. Please inform the Graduate Coordinator at least two weeks prior to the defense in order to obtain approval by the Graduate College.
- If a committee has only three members, all members must approve the dissertation. If the committee has four or five members, there may be one dissenting vote.
- The committee may a) approve the dissertation without revisions, b) approve the dissertation with minor revisions, or c) require major revisions prior to approval. When revisions are required, the committee will provide the student with a written list of required revisions and a date for completion of the revisions. The committee may elect to have the major advisor approve the revised document, or required other or all members of the committee approve the revisions.
- Once the final version of the dissertation is approved, the chair will send an email to the Graduate Coordinator and the degree specialist in the Graduate College verifying they have accepted the dissertation revisions and submit final paperwork to the Graduate College.

Specific Requirements for Programs in Psychology

Listed in Appendix A are specific requirements for each of the programs in Psychology: Clinical, Cognition & Neural Systems, and Social Psychology. Unless otherwise noted by the program, departmental requirements and policies as outlined above regarding the Master’s, comprehensive examination, Ph.D. requirements, Doctoral dissertation, and graduate evaluations apply to ALL graduate students in Psychology.

Graduate Evaluations and the Annual Progress Report

Evaluation and Retention Policy

The Department of Psychology program directors and advisors oversee the performance of all graduate students in order to ensure that they maintain academic standards that have been agreed upon by faculty members in the Department, and that they are making good progress. Graduate students must meet the Psychology Department degree requirements in a timely manner. When a student fails to meet program guidelines for satisfactory progress, the student will receive written notification with a clear statement of what the student must do and a date by which such actions must be completed. Students will be given an opportunity to appeal by following the appeals guidelines stated below. Students who fail to take remedial actions by the deadlines specified may be dismissed from the program, and a recommendation will be sent to the Graduate College to dismiss the student from the program. Students have the right to appeal such decisions to the Graduate College.

Yearly Evaluations

Each September, each student prepares a progress report that is examined by the major advisor and relevant program director, who jointly prepare written feedback addressing (a) the student's productivity and achievements, (b) the student's progression through the program's milestones, and (c) expectations for the coming academic year. These letters with feedback are then reviewed by the Psychology Department Director of Graduate Studies in order to ensure that evaluation criteria are applied consistently across programs and advisors. The letter serves to establish an agreement between the student and the program regarding performance expectations.

Students are required to discuss the content of the letter with their advisor. If the student disagrees with the content of the letter, further discussion with the advisor, the program director, or the Director of Graduate Studies takes place. Recommendations may be made to the Department Head regarding revisions, if any, to the letter. When a student falls behind schedule or in case of sub-standard achievement, the letter serves to provide students with advice regarding steps to remediate problems (e.g., setting deadlines, decreasing activities that are incompatible with timely completion), reminds the student of resources available to them, and notifies them of potential consequences if deadlines are not met.

A student who does not provide a yearly progress report or does not maintain adequate contact with their advisor and the department will be considered inactive and may be dismissed from the program.

Satisfactory progress.

Students must maintain a GPA of 3.0 or higher in order to be considered in good standing in the Graduate College. Students whose GPA drops below 3.0 are automatically placed on probation by the College. Information regarding probationary status due to grades is available on the Graduate College website. In addition to the grade requirements set out by the Graduate College, students in Psychology are expected to complete their graduate studies following a five-year program. A "year" is considered a twelve-month period that includes the fall semester, spring semester, and the summer months.

- Year 1: Approval of the Master's proposal
- Year 2: Completion of all requirements for the Master's degree
- Year 3: Completion of written and oral comprehensive examinations
- Year 4: Approval of the Dissertation proposal
- Year 5: Completion of all requirements for the Ph.D.

Note that the five-year plan is extended to six years for graduate students in the Clinical Program to include the internship year.

A student is behind schedule when they:

- Have not proposed a Masters by the end of the first year.
- Have not completed all requirements for the Masters by the end of the second year.
- Have not completed written and oral Comprehensive Examinations by the end of third year.
- Have not completed a Dissertation proposal by the end of the fourth year.
- Have not successfully defended a Dissertation by the end of the fifth year, or the end of the sixth year for students in the Clinical Program.

The Evaluation Letter

The evaluation letter should include several key points:

- The letter should note the student's productivity and achievements, including program milestones such as completing the Masters or comprehensive exams, publications and presentations of their work at professional conferences, and other academic achievements.
- The letter will state where the student is in their 5 year training schedule as outlined in the graduate program handbook. Students are either (a) ahead of schedule, (b) right on track, or (c) behind schedule.
- For students who are on track in the program, the letter will note what the expectations are for the coming year including expected dates of completion for upcoming milestones. If a student is behind schedule, the advisor should note any special circumstances that may have led to the delay in completing the milestones.

Warning Levels and Provisional Status

When the student is behind schedule in their progress, three levels of warning may appear in the evaluation letter:

Level 1 Caution: When a student is behind schedule, the letter will include a plan for getting back on track during the coming year with expected dates of completion for required milestones. The letter should encourage students to get focused and work with their advisor closely to stay on track. Students should be warned that failure to progress through the graduate program in a timely manner may result in academic sanctions in the future, including being placed on provisional status within the Department of Psychology or being dismissed from the graduate program.

Level 2 Provisional Status: Students who have been given a Level 1 caution in a previous evaluation and who fail to meet all the expectations outlined in the previous letter may be placed on provisional status. The evaluation letter will state that:

“Given that you did not meet all of the requirements outline in last year’s letter, you have been placed on provisional status within the Department of Psychology effective immediately. We encourage you to develop a plan with your advisor so that you meet all the program requirements listed below before the end of the (Spring/Summer) (year) semester. While on provisional status, you remain eligible to take courses and are considered for funding with the same priority as other students in your year, but you must focus on meeting the departmental milestones outlined below. Failure to do so may result in you being dismissed from the Psychology Department Graduate Program for lack of adequate academic progress.

The evaluation letter should outline the specific requirements with expected completion dates required in order for the student to be removed from provisional status.

Level 3 Non-degree Seeking Status: Students who have been placed on provisional status in the Department and who have not completed all the requirements outlined in the previous evaluation letter will be sent notification by registered mail that they are being officially dropped from the Psychology Department Graduate Program. The evaluation letter will state the following:

“The previous evaluation letter placed you on provisional status within the Department of Psychology and stated what you had to do in order to revert to good standing in the graduate program. Because you did not meet the requirements outlined in last year’s letter, we are requesting that the Dean of the Graduate College dismiss you from the Psychology Graduate Program effective immediately. In order to re-enter the Psychology Graduate Program, you would have to re-apply and be considered along with new applicants during the regular graduate recruitment cycle. The decision to accept you back into the graduate program would be at the discretion of the faculty.

A student who believes, with good academic reason, that this decision was improperly applied may appeal or file a grievance with Graduate Student Academic Services (GSAS) explaining all relevant facts. Such an appeal/grievance must be accompanied by supporting documents and a letter of support from the student’s Major Advisor, Director of Graduate Studies, or Department Head and required signatures. The procedure for filing grievances is detailed on the Graduate College website (<https://grad.arizona.edu/policies/academic-policies/grievance-policy>).

Ongoing Assessment of Specific Competencies for Graduate Students

A quantitative system is used to evaluate student competencies in a variety of domains. These domains are assessed repeatedly during a student’s time as a student in the program: annually during the student review process; at two or more oral presentations during students’ time in residence; and during all major program milestones (e.g., following the oral comprehensive examination, at the dissertation proposal and thesis defense meetings). Additionally, these competencies are assessed each year following the dissertation proposal meeting at an annual meeting of the dissertation committee until the student defends the dissertation. These specific competencies comprise:

1. Written Communication: effectively communicates research design, significance, impact, results, and interpretation in writing, including but not limited to research proposals and scientific publications.
2. Oral Communication: effectively communicates scientific findings, significance, and the impact of research findings to general scientific and non-scientific audiences through oral presentation.
3. Scientific Research and Execution: designs, conducts, analyzes, and interprets original research on significant scientific, methodologic, and/or clinical problems in psychology.
4. Scientific Knowledge and Concepts in Psychology: demonstrates depth and breadth of scientific knowledge in their specific field and an understanding of the general foundations of psychological science.
5. Research Integrity and Ethics: demonstrates a thorough and applied understanding of the American Psychological Association’s Ethical Principles of Psychologists and Code of Conduct, and the ways in which these principles guide all scientific and, if applicable, clinical endeavors.
6. Multiculturalism and Diversity: understands and considers the ways that differing and intersecting cultural and social statuses— including but not limited to race, ethnicity, sexual orientation, gender, gender identity or expression, ability/disability, religion, language, socioeconomic status, and age—shape and are shaped by psychological science, and, if applicable, all clinical endeavors.

During each annual review period, your advisors will provide one annual competency rating. At each of the other assessment occasions, two or more faculty will rate the, two or more faculty will rate the student in each competency using the following scale: Novice, Basic Competency, Proficiency, or Mastery. The general expectation would be for students to receive ratings according to their progression through the program:

- novice-level competency (expected for students entering the graduate program or just becoming familiar with the profession-wide competencies)
- basic competency (expected for students at the master’s level)
- proficiency (expected for students post-master’s level)
- mastery (expected as students are doctoral candidates or complete their PhD).

Ratings are completed and comments provided by faculty using a Qualtrics survey

(https://u.arizona.co1.qualtrics.com/jfe/form/SV_1Y5KVqGaHwwJlmF), and a copy of the ratings and comments are

emailed to the student, and also to the Graduate Coordinator. Students should follow-up with faculty if they do not receive the email evaluation promptly after each assessment occasion.

Graduate College Procedures

The Graduate Catalog presents university policies that apply to all graduate programs at the University of Arizona (<https://grad.arizona.edu/policies/academic-policies>).

These include:

- admission requirements
- students' financial obligation
- degree requirements
- scholarship requirements (including criteria for retention and termination and due process, and appeal procedures).

Students are advised to carefully read the relevant sections of the Graduate College Website (<https://grad.arizona.edu/policies/>)

Graduate Student Grievance Procedure

We encourage all students to talk with the Director of Graduate Studies (Allen), program Ombudsperson (Beck), or the department head (Ryan), as well as with one of their graduate student representatives, about any concern they may have. For complaints that are not remediable by the department, a grievance procedure is available at the Graduate College to graduate students who believe that they have been treated unfairly by a faculty member or the department (<https://grad.arizona.edu/policies/academic-policies/grievance-policy>). Note, however, that complaints that cannot be addressed through this procedure are allegations of gender (including sexual harassment), racial, ethnic, religious and sexual orientation discrimination, which must be dealt with by the Affirmative Action Office; grade appeals and graduate examination appeals, procedures for which are set forth in the Graduate College Website; and complaints against University employees and students that are covered by provisions of the University Handbook for Appointed Personnel ("UHAP"), the Staff Personnel Policy Manual ("SPPM"), and the Student Code of Conduct. The Associate Dean of the Graduate College (Janet Sturman) or other delegate of the Dean of the Graduate College (hereinafter "Associate Dean") shall determine whether a complaint is within the decision-making jurisdiction of the Graduate College.

Most problems can be readily resolved within the college, where faculty members and administrators are more knowledgeable about department and college policies, procedures, and practices. If a student believes that his/her complaint is not otherwise remediable and is within the jurisdiction of the Graduate College, a written request for a meeting may be submitted to the Associate Dean of the Graduate College who shall arrange a meeting within 10 working days.

After this meeting, the Associate Dean may consult the academic college dean, the department head, and any faculty member involved and attempt to resolve the issue informally. If the matter cannot be resolved, the Associate Dean shall determine whether the matter is not otherwise remediable and is within the decision-making jurisdiction of the Graduate College. If so, the Associate Dean shall then ask the Dean of the Graduate College to appoint a review committee as follows, and so advise all parties:

- One faculty member from the student's department, as recommended by the department head;
- Two faculty members who serve on the Graduate Council, one of whom will serve as chair;
- One faculty member at large or graduate program coordinator; and
- One full-time graduate student from the student's college, who may be the college representative from the Graduate and Professional Student Council.

The committee shall design its own procedures. At a minimum, such procedures must include adequate written notice of meetings at which parties shall be afforded an opportunity to present their position. The

committee shall also establish time periods within which the individuals involved must respond to requests for information and other requests by the committee; failure to comply within the time allowed may result in a final decision adverse to the noncompliant individual. Failure to appear for a scheduled meeting may also result in a final decision adverse to the individual who fails to appear. The committee may choose to meet separately with the student, faculty member, department head, or any other individual having relevant information, or it may request short written statements from any or all parties. The committee shall provide a written report with recommendations to the Dean of the Graduate College who shall make the final decision and recommendation. The decision shall be provided to the student, the faculty member, the department head, and the dean(s) of the college(s) involved (see <http://grad.arizona.edu/policies/academic-policies/summary-grievance-types-and-responsible-parties>).

Guidelines for Teaching Assistants and Instructors

These guidelines should be considered flexible and subject to negotiation between the TA and the instructor at the beginning of each semester.

The Psychology Department views TAs as “Instructors in Training.” As such, TAs may be asked to learn, perform, and ultimately take responsibility for any or all of the duties of a full-time instructor. Suggested duties and responsibilities are listed in the form “Guidelines for TA Responsibilities” and the form “Guidelines for Online TA Responsibilities”, available on the Graduate Student Resources and Forms web page. This form should be completed jointly and signed by the TA and the instructor at the start of each semester.

TAs may be responsible for any or all of the following:

- Grading tests, assignments, papers, drafts of papers
- Constructing, proctoring, and grading tests and exams
- Constructing, carrying out, and grading makeup tests and exams
- Assistance with classes that may include lecturing (no more than three times) and class demonstrations
- Assistance with class materials including photocopying, placing material on reserves, and managing the D2L website
- Office hours** (not to exceed 3 hrs per week), answering student email
- Attending classes
- Reading the textbook or other course materials
- Conduct review sessions or online discussions
- Maintaining class records
- Other duties that may include webpage management, SALT services, or note taking

Please note that the Psychology Department policy is that all Main Campus online courses (but not UA Online courses) must have “in person” office hours (not to exceed 3 hrs per week). Additional online office hours or student contact time should be negotiated with the instructor.

In general, TAs are not asked to:

- Prepare an instructor’s lectures or PowerPoint presentations
- Do research or readings that are not relevant to the course
- Handle, on their own, incidents of academic misconduct without the instructor’s presence
- Proctor exams on a regular basis without the instructor’s presence. In most large classes, two proctors will be needed; one of these should usually be the instructor. If the instructor is unable to attend, another proctor should be requested.
- Have more than 3 office hours per week
- Guest lecture without adequate notice and time to prepare (~ 1 week).
- Complete grading of exams, papers or drafts without rubrics or reasonably clear grading guidelines

There may be times when these or other tasks are necessary, and these specific circumstances should be discussed and negotiated with the instructor. If a TA is concerned about the tasks they are being asked to undertake, they should discuss this with the Director of Graduate Studies as early as possible in the semester.

Midway through the semester, TAs may request feedback from the instructors concerning their performance. This feedback may be provided on the form "TA Mid-Semester Evaluation."

At the end of the semester, instructors will be asked to complete the "Psychology TA Semester Evaluation." Completion of this form is mandated by the Graduate College and the results of this evaluation are reported to the Graduate College. A "Low" evaluation may lead to termination of the TA. The mid-semester feedback is designed to ensure that all students are able to achieve a minimum rating of "Adequate."

Grader Guidelines

The following guidelines have been developed to facilitate communication between graders and instructors. In order for graders to receive a positive evaluation of their performance at the end of each semester, they should a) have a clear understanding of their responsibilities at the start of the semester and b) have the opportunity to improve their performance during the course of the semester. To ensure that these goals are achieved, the following procedures are recommended.

- Graders will meet with instructors at the start of each semester during which time the duties and responsibilities of the grader will be outlined along with the percentage of time estimated for each of the expected tasks. The instructor and the grader should jointly complete the appropriate sections of the "Guidelines for TA Responsibilities" and both should retain a copy. Appropriate sections include "Grading Tests" and "Maintaining Class Records". This is intended to be a working document and may be altered during the semester with the agreement of the grader and instructor.
- Graders must be provided with grading keys and/or rubrics for grading all exams, papers, and draft papers.
- Graders will receive supplemental compensation as part of their Graduate Assistant or Teaching Assistant position. The standard arrangement for graders is eighty hours for the entire semester. Graders should track their hours and keep the instructor informed as the semester progresses. If additional assistance is needed, it should be requested from the Graduate Coordinator.

Graders may be assigned the following duties:

Grading

- Tests
- Assignments
- Papers (with guidelines/rubric)
- Drafts of papers (with rubric)

Maintain Class Records

- Posting marks
- Answer keys
- Posting announcements

University Resources

- Graduate College Policies and Procedures: grad.arizona.edu/policies
- Code of Academic Integrity: deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity
- Responsible Conduct of Research: rgw.arizona.edu/research-compliance/rcr
- University Catalog: catalog.arizona.edu
- Graduate and Professional Student Council: gpsc.arizona.edu
- Family resources, including childcare, elder care, employee assistance, parental leave and family medical leave: lifework.arizona.edu/cc
- Graduate Center (professional development resources): gradcenter.arizona.edu

APPENDIX A: Specific Requirements for Graduate Program Areas in Psychology

Clinical Psychology Program Requirements

Details of the requirements for the Clinical Psychology program can be found in the Clinical Psychology Graduate Handbook Available from the Clinical Program webpage (psychology.arizona.edu/clinical)

Specific Classes and Curriculum Issues

In addition to departmental class requirements, students in the Clinical Program must take the following additional courses.

- Ethics (3 units, spring of first year).
- Assessment Sequence (Year 1)
 - 621 Clinical Assessment Methods: 3 units, Fall
 - 694a Clinical Assessment Practicum: 2 units, Fall; 3 units, Spring
- Intervention Sequence (Year 2)
 - 625a,b Psychosocial Interventions: 3 units, Fall & Spring
 - 697 Intervention Seminar: 3 units Fall, 3 units Spring
 - 694b Intervention Practicum: 2 units, Fall, 2 units Spring
- Externship (Years 3 and 4)
- Clinical work outside the department in university and community agencies, usually about 20 hr/wk in the third year and 10 hr/wk in the fourth year. All students on externship are required to register for 694c. You must attend the seminar for two academic semesters, but be enrolled every year you work at an external placement.
 - 694c Consultation & Supervision: 1 unit, Fall, 1 unit Spring
- Psychopathology course (any year)
 - 582 Advanced Psychopathology: 3 units, one semester

Breadth of scientific psychology (for complete details, see Clinical Program Handbook):

I. Biological aspects of behavior [area instructor: Allen]

One of the following courses: Psyc 504a (Brain and Behavior), or Psyc 585 (Psychoneuroimmunology).

II. Cognitive aspects of behavior [area instructor: Grilli]

Psyc 506b (Foundations of Cognitive Psychology), or Psyc 696c (Cognitive/Affective Bases of Behavior—with O'Connor)

(Psyc 696c is taught as a seminar every other year with Dr. O'Connor, but can be taken with Dr. Grilli as part of the portfolio sequence as well.)*

III. Affective aspects of behavior [area instructor: O'Connor]

Psyc 696c (Cognitive and Affective Bases of Behavior—with O'Connor)

IV. Social aspects of behavior [area instructor: Sbarra]

Psyc 560 (Advanced Social Psychology)

V. Developmental aspects of behavior [area instructor: Sbarra]

One of the following courses: Psyc 583a (Lifespan Developmental Psychopathology; SERP 601 (Cognition and Development; in Educational Psychology Dept)

Advanced Integrative Knowledge

In addition to the five DSK breadth area requirements, students are also required to take at least one class that provides “advanced integrative knowledge,” defined as a course that integrates at least two of the breadth area DSK topics. Presently, in our curriculum, the following courses provide advanced integrative knowledge:

- Psyc 696c: Cognitive/Affective Bases of Behavior (Cognitive Affective)
- Psyc 585: Psychoneuroimmunology (Biological-Cognitive)
- SERP 601: Cognition and Development in Education (Cognitive-Developmental)
- Psyc 504a Human Brain-Behavior Relationships (Biological-Cognitive)
- Psyc 587 Foundations of Health Psychology (Biological-Affective)

NOTE: Each semester new courses are added/deleted from the University course catalog. Students who are interested in taking a class not listed above for potential full or partial fulfillment of a breadth area requirement should consult the 696 instructor of record (Allen: Biological; Bootzin: Cognitive/Affective; Sbarra: Human Development; and Sbarra: Social) and ask them to evaluate the specific class syllabus in order to determine if the course provides full or partial fulfillment within a specific breadth area. It is the requirement of each student to provide the 696 faculty of record with the syllabi for approval; if a class is not listed above, it cannot be used to fulfill any breadth area requirements without the 696 faculty member’s approval in advance of a student taking the course.

Predoctoral internship. The predoctoral internship is a full-time, twelve-month training experience in either a CoA-accredited setting or in a setting approved by the Clinical Training Committee (CTC).

Elective Courses. Elective Courses listed in the Graduate Catalogue can be part of major or minor requirements.

The Neuropsychology Track. Graduate students who decide to take the clinical neuropsychology area of emphasis are required to take: Principles of Neuroanatomy (502); Human Brain-Behavior Relationships (504A); Clinical Neuropsychology Practice: Evaluation of the Older Adult (504B); and The Clinical Neuropsychology Practicum (694D). The 504 courses are pre-requisite for the Clinical Neuropsychology Practicum (694d). Therefore, students are encouraged to complete 504A and 504B in Year 1, and 694D in Year 2. Students are encouraged to take 502 in Year 2 or 3. Students are also encouraged to consider other courses in cognitive psychology, biopsychology, and neuroscience (e.g., Graduate Neuroscience [NRSC] courses).. Sequence Director: Grilli. Full details are here: <http://psychology.arizona.edu/neuropsych-minor>

The Health Psychology Track. Graduate students who decide to take the Health Psychology Track are required to take: Foundations in Health Psychology (PSY 587) ; Behavioral Medicine Interventions (PSY ### pending); at least one more course within the Health Psychology area and a Health-Psychology practicum. In addition students will attend the Health Psychology Brown Bag series, and complete at least a one-year 20-hour/week health-focused clinical practicum. Sequence Director: Ruiz. Full details are here: <http://psychology.arizona.edu/health-track-minor>

Additional Note for Clinical Students about Graduate Coursework: Obtaining Full Exemptions from Courses

As described in the section “**Transfer Credits**”, students entering the program having taken graduate courses that fulfill departmental or clinical program requirements may elect to transfer those courses for credit, if those courses are deemed equivalent to currently taught courses in the Ph.D. program. Students in the clinical program should first consult the Program Director (Sbarra) to begin the process of formally transferring graduate credits. The student should then provide the relevant faculty member with syllabi and all supporting information to consider the equivalence of the work. Please CC the DCT on any emails to faculty instructors who are asked to make a recommendation about exemption directly to the DCT. Students who have taken graduate courses in one of the four breadth areas required for the clinical program (see above) should consult with the instructor of the respective 696 course (see p. 11 of the

Handbook). If the DCT has concerns regarding a student's exemption, the matter will be considered further by the Clinical Training Committee (CTC), who will make a final decision about the course requirement in question.

All course transfers must be formally recognized on the student's Plan of Study and need approval by the DCT (Sbarra), as well as the Director of Graduate Studies (Allen). Students who wish to receive formal transfer credit for courses from a prior university/graduate program should consult with the Director of Graduate Studies; all other inquiries should be directed to the DCT (Sbarra).

Cognition and Neural Systems Program Requirements

Students in the Cognition and Neural Systems Program meet their Program requirements by following the course of study outlined below.

I. Departmental Requirements (See **Departmental Curriculum Requirements** above)

II. Foundations of CNS: A two-semester core course (PSY 506A&B). Students in the CNS Program generally take this core course during the first two years (6 units). PSY 506A is intended to provide a basis for understanding how brains acquire, assimilate, store and retrieve information and how they compute adaptive responses to external inputs. Understanding these processes requires a basic working knowledge of both the theoretical principles and biological mechanisms underlying neural signaling, knowledge representation and data storage. PSY 506B covers basic concepts, foundational knowledge, and common paradigms in the study of perception, attention, memory, learning, language, and decision-making.

III. Additional breadth courses within the CNS Program: One course from each of the columns below (6 units).

Neural Systems

PSYC 501a/b: Psychophysiology
 PSYC 502: Neuroanatomy
 PSYC 503C: Intro to Computational Neuroscience
 PSYC 504A: Human Brain-Behavior Relations
 PSYC 520: Cognitive Neuroscience of Hearing
 *PSYC 524: Gerontology
 *PSYC 528: Cognitive Neuroscience
 *PSYC 530: Neural Bases of Language
 PSYC 544A: Computational Cognitive Neuroscience
 SPH 545: Neurogenic Language Disorders in Adults
 NRSC 560: Systems Neuroscience
 *PSYC 578: Sleep & Sleep Disorders
 NRSC 582: Topics in Neural Development
 NRSC 583: Topics in Neural Plasticity
 NRSC 587: Biology of Neurological Disease
 NRSC 588: Principles of Cellular & Molecular Neuro
 PSYC 596E: Biopsychology
 PSYC 596L: Intro. To Neural Data Analyses
 PSYC 597H: Neuroanatomy Lab (take with 502)
 NRSC 653: Neuropharmacology/Drugs of Abuse

Cognition

PSYC 509: Psycholinguistics of Writing Systems
 *PSYC 524: Gerontology
 PSYC 526: Advanced Human Memory
 *PSYC 528: Cognitive Neuroscience
 PSYC 529: Advanced Perception
 *PSYC 530: Neural Bases of Language
 PSYC 532: Psychology of Language
 PSYC 533: Theories of Language Development
 PSYC 534: Perceptual Learning
 PSYC 536: Visual Cognition
 PSYC 538: Computational Linguistics
 PSYC 540: The Bilingual Mind
 PSYC 542: Lexical Systems

PSYC 551: Phil & Psychology (Pragmatics)
 PSYC568: Speech Perception
 *PSYC 578: Sleep & Sleep Disorders
 PSYC 596C: Cognitive Development
 PSYC 596F Cognitive Psychology: Topics
 PSYC 696F: Linguistic Theory and Applications

* Courses listed in both areas, which can be used to satisfy either distributional requirement.

IV. Committee Meetings. Entering students are expected to complete appropriate coursework and to set a goal of completing their Master's thesis/project in the second year of the program. By the end of the Spring semester of the first year, students must form a Master's committee comprising faculty in the Cognition and Neural Systems Program, and meet with them as a group to discuss their coursework plan and the proposed direction of their research for the coming year. Either at this meeting, or at a subsequent one early in the Fall semester of the second year, each student will present to the committee a proposal for the Masters Research. In future years, students must organize a meeting with the Committee as a group at least once per year, typically late in the Spring semester. At these meetings, students will give a short presentation on their progress, including a discussion of their completed and in-progress research, the courses they have completed and those they plan to take, and the proposed direction of their research for the coming year. The committee members will advise the students on their plans. Students and committee members will work together to ensure that each student's program of study is sufficiently broad yet tailored to the student's interests. Summaries of these Committee meetings will be given to the CNS Program Director and placed in the student's file.

V. Seminars. All CNS students, with the exception of first year students, are expected to make at least one seminar presentation each semester. The primary venue for this is the weekly CNS Seminar. All CNS students must attend the CNS Seminar on a regular basis. Other venues for the mandatory talk include various area group meetings and journal clubs.

VI. Completing the Program. Student may take any two additional courses from the lists above to complete the 18-unit requirement of the CNS Program. (The menu of courses will change, as new faculty members or courses are added. In addition, students may be able to substitute other courses by permission of their committee and the Program Director.)

VII. CNS Minor.

Students in the CNS Program who choose to minor in CNS may choose any three additional courses after consulting with their minor committee members.

A minor in CNS unaccompanied by a major in CNS can be earned by taking the core courses (PSYC 506A&B) and one other course from either the Neural Systems or the Cognitive column, for a total of 9 units.

Social Psychology Program Requirements

Graduate training in social psychology at the University of Arizona is based on the research mentorship model. Graduate students are admitted to the Ph.D. program based not only on their merit but also on the basis of the fit of their research interests to those of faculty members in the program. In addition to the core faculty in the social psychology program, there are also a variety of faculty both in Psychology and other departments with strong backgrounds and interests in social psychology and related areas.

The primary purpose of our Ph.D. program is to train graduate students to become productive social psychologists who will contribute to the field in two ways:

- By contributing to the advancement of theoretical understanding and empirical research in social psychology.
- By effectively teaching courses within the domain of social psychology.

To be an effective researcher and teacher, when you leave the program, we want you to have:

- A broad knowledge base within social psychology;
- A strong understanding of statistics and methods;
- Extensive experience with the entire research process from conception to publication;
- Directions for your future research.

To achieve these goals, we expect the following from our graduate students:

1. Participation in all graduate courses offered by the social psychology faculty (1 or 2 each year). Graduate courses provide background in specific areas of social psychology. They also represent a forum for scholarly discussion, feedback, brainstorming and developing collaborations for future research.
2. Active participation in research from the first semester in the program until completion of the Ph.D. A Master's Thesis is to be completed by the end of the second year and a Dissertation is to be completed by the end of the fourth or fifth year. The department maintains a large subject pool and each faculty member has ample lab space for your research endeavors.
3. Experience TA-ing and teaching courses in social psychology and related areas. Teaching is one of the best ways to develop breadth of knowledge and ideas for research.
4. Completion of a 9 credit minor (a departmental requirement). The minor requirement is useful because it provides breadth that should enhance future research endeavors and because it adds knowledge and skills that are often useful in seeking employment upon completion of the Ph.D. Your choice of minors in the department include: clinical, cognitive, health, neuropsychology, statistics, or an individualized minor comprising three courses totaling at least 9 credits. Minors outside the department are possible with your advisor's permission.
5. Active participation in all program-relevant activities. These include:
 - The Social Psychology Brown Bag Series and Lab Meetings. Research meetings provide a semi-formal opportunity for you to practice research presentations and discuss your ideas with the faculty and other students in the social program.
 - Colloquia and Other Activities Involving Visiting Social Psychologists. The Department Colloquium Series usually includes two social psychologists; occasionally unofficial visits occur as well. Students have the opportunity to meet and help host visiting colloquium speakers. This a great way to extend your intellectual network beyond the department.
 - Participation in Faculty Job Searches And Recruitment Of New Graduate Students. Getting involved with various recruitment activities provides students with insight into the job market and experience with evaluating applicants.
6. Participation in regional and national conferences, such as APA, APS, SPSP, and WPA. These conferences are an opportunity for you to make others aware of your work and to meet other people in the field. They are of great value for your own research and for your eventual job prospects.
7. Because our program is small, we cannot offer formal coursework to cover all of the areas within social psychology. Therefore, to develop a broad knowledge base in areas for which we don't have formal courses, you will need to make the effort to read classic works and keep up with theoretical and empirical progress on your own. We don't expect you to have the deep, detailed knowledge of every area

that you should have for your areas of research specialty, but you should be familiar with the major theories, findings, players, and new trends in all of the major areas. We will of course be happy to help guide you in these efforts. Regular reading of the journals JPSP and PSPB will greatly aid your efforts. There are a variety of periodic edited volumes that can also help. Prominent among these are:

- Advances in Experimental Social Psychology
- Handbook of Social Psychology
- Ontario Symposium Series
- Psychological Perspectives on the Self
- Social Psychology: Basic Principles

The following are the major areas about which you should have knowledge of the fundamental theories and methodologies:

- Aggression
- Attitudes and Persuasion
- Culture
- Emotion
- Group Dynamics
- Health, Stress, and Coping
- Interpersonal Attraction and Close Relationships
- Interpersonal and Intergroup Conflict
- Personality Variables and Processes
- Prejudice and Stereotypes
- Prosocial Behavior
- The Self
- Social Cognition
- Social Influence
- Social Neuroscience

8. Finally, to establish the kind of publication record necessary to compete successfully in the job market, you will need to go far beyond what is formally required of you, and this is what we will expect of you. If you are highly motivated to be productive and influential in the field of social psychology, the training and experience provided by our program should allow you to launch a fulfilling career in the field of social psychology.

APPENDIX B: Available Graduate Training in Applied Statistics (updated March, 2018)

Graduate students quickly learn that success in research requires a solid understanding of statistics. Additionally, advanced statistical expertise often gives graduate students an advantage on the job market. There are many statistics courses offered at the University of Arizona, but given the size of the University, it is easy to get overwhelmed with options, not knowing whether a graduate course in statistics is too advanced or too basic. The goal of this website is to help students find courses in statistics that meet their research goals and that are a good fit to their background.

Each participating academic program has its own course requirements, so please check the Graduate Handbook for your department and speak to your academic advisor before registering for classes. An overview of available classes, including when they are generally offered, is provided below (see “Course Overview”). More detailed descriptions are provided under “Course Descriptions”. The instructors of the courses listed below have discussed the content covered in each course and developed class sequences that are optimal for different students, depending upon your previous training in quantitative research methods (see “Suggested Course Sequences”). Additional intermediate and advanced classes should be chosen based on your research area and interests.

COURSE OVERVIEW

Note: The following list refers to courses taught during the academic year. In some cases, an alternate version of a class may be offered during the summer, but those may differ in the content and software from that listed here.

Course #	Topics	Software	Offered
<i>Introductory & Intermediate</i>			
EDP 541	Descriptive statistics, hypothesis testing, <i>t</i> -tests, ANOVA, correlation, simple regression, chi-square	R	Every Fall
PSYC 510	Descriptive statistics, hypothesis testing, probability, distributions, <i>t</i> -test, chi-square, ANOVA, regression, non-parametric tests, emphasizes working with real data from your own research	R	Every Fall
FSHD 537A	Hypothesis testing and Bayesian inference, model selection and cross validation, general linear model including <i>t</i> -test, ANOVA, correlation, multiple regression, logistic regression, repeated measures, multivariate models	R	Every Fall
EDP 641	Multiple regression, logistic regression, intro to multilevel models (a.k.a. hierarchical linear modeling), emphasis on nesting of students w/in classes	R	Every Spring

FSHD 537B	Missing data, mediation, moderation, person-centered analyses	Mplus & R	Every Spring
PSYC 507A/597A	Philosophy of science, continuous parameter estimation, general linear model including ANOVA, correlation, multiple regression, mixed GLMs	UniMult 2	Every Spring
ANTH 595D	Approximately equal attention to [1] R programming (2) data visualization, and (3) statistical procedures using R. Statistical modeling includes t-tests, ANOVA, linear regression, multiple regression, mixed-models, clustering and dimension reduction.	R	Every Fall
<i>Advanced</i>			
EDP 646a	Matrix algebra, eigenvalue decomposition, T^2 , MANOVA, discriminant, canonical correlations, PCA, EFA, CFA	R	Every Fall
FSHD 617C	Multilevel modeling (a.k.a. hierarchical linear modeling), emphasis on occasions nested w/in people, error structures, dyads, traditional maximum likelihood and Bayesian approaches	R	Fall even years
FSHD 617A	Confirmatory Factor Analysis, Structural Equation Modeling, measurement invariance, latent mediation/moderation, latent APIMs, growth curves	Mplus & R	Fall odd years
EDP 558	Classical Test Theory, Generalizability Theory, Item Response Theory	jMetrik & R	Spring even years
PSYC 507B/597B	Cascade Modeling, Structural Equations Modeling, Confirmatory and Exploratory Factor Analysis, including Multi-Group CFA and Biometric Behavioral-Genetic Models	EQS	Every Other Fall
PSYC 507C/597C	Variance Component Models, including Repeated Measures ANOVA, Growth Curve Analysis, Hierarchical Multi-Level Modeling, Generalizability Analysis	SAS	Every Other Fall

COURSE DESCRIPTIONS

INTRODUCTORY / INTERMEDIATE

EDP 541: Introductory Statistics in Education

This is a great first class if you have little or no prior training in quantitative research, or you've taken classes before but didn't feel like you understood them, or you are nervous about statistics. It covers all the basics and moves a little slower than the other introductory classes, but it still provides the foundation you will need to advance to intermediate classes (e.g., sampling distributions, logic behind null hypothesis significance testing, statistical vs. practical significance). The course is taught using the R Statistical Computing platform and you will learn the basics you need to use it for data analysis.

PSYC 510: Statistics Fundamentals

This is a great first class if you've taken one or two statistics classes and sort of understood them. The class emphasizes working with your own data right from the beginning. It covers the logic of statistical inference and hypothesis testing, as well as all the fundamentals, such as descriptive statistics, data transformation, t-tests, regression, ANOVA, and non-parametric tests, such as chi-square, Wilcoxon and Kruskal Wallis tests. The course is taught using the R Statistical Computing platform, and you will learn both basic and more advanced skills for data analysis and visualization.

FSHD537A/L: Introduction to Statistical Analysis

This is a great first or second class if you've taken one or two statistics classes and think you understood them. The class covers both traditional Null Hypothesis Significance Testing (NHST) and Bayesian inference, as well as model selection. It emphasizes the general linear model, which includes all the fundamentals (t-test, ANOVA, correlation, multiple regression) and a few more advanced topics (logistic regression, repeated measures and multivariate models). The course is taught using the R Statistical Computing platform and you will learn both basic and more advanced skills for data analysis.

ANTH 595D: R programming for data visualization and analysis

This is a great first or second class. It is unlike a traditional statistics course in that it focuses roughly equally on learning the R programming language, developing data visualization skills, and implementing statistical models in R. The programming part of the course introduces the R environment and skills related to reading/writing data, functions, control structures, data tidying and data manipulation/aggregation. The data visualization part of the course focuses on effective methods for conveying information through statistical graphics. It introduces the primary graphics systems in R, with a focus on the grammar of graphics and the ggplot2 package. The data analysis portion of the course covers a variety of statistical models at a conceptual level (little to no math) and includes: t-tests, ANOVA, bivariate linear regression, multiple regression, mixed models, and a brief overview of dimension reduction and clustering techniques.

EDP 641: Selected Applications of Statistical Methods

Advanced Linear Models. This is a great second or third class for most people. The class covers multiple regression, logistic regression and introduces multilevel models (a.k.a. hierarchical linear models) with a focus on individuals (e.g., students) nested in groups (e.g., classrooms). The course is taught using the R Statistical Computing platform and you will learn both basic and more advanced skills for data analysis.

FSHD 537B: Intermediate Statistics

This is a great second or third class for most people. The class covers mediation, moderation, missing data handling and introduces person-centered analyses. The course is taught using MPlus and R.

PSYC 507A/597A: Statistical Methods in Psychological Research

This is a great second or third class if you would like to get a better grasp of the “big picture” and the concepts underlying statistical methods. The class covers the philosophy, history and methodology of science, as well as all the fundamentals, such as correlation, ANOVA and regression models. It also introduces the Continuous Parameter Estimation Method and its use with the UniMult2 software package.

ADVANCED

EDP 646A: Applied Multivariate Statistics in Education

This is a great advanced class if you would like to develop an understanding of matrix algebra and apply it to multivariate analyses. Topics covered include Hotelling’s T-squared, MANOVA, discriminant analysis, canonical correlation, scale development (including PCA, EFA, & CFA), and cluster analysis. The course is taught using R.

FSHD 617C: Multilevel Modeling

This is a great advanced class if your research interests include longitudinal or time-varying processes. The course provides a complete introduction to multilevel modeling (a.k.a. hierarchical linear models), with an emphasis on time nested within individuals, who may also be nested within larger social units such as dyads. Both traditional maximum likelihood and Bayesian approaches are included. The course is taught using R.

FSHD 617A: Structural Equation Modeling

This is a great advanced class for most people, since structural equation models (SEM) are used across many different research domains. The course provides a complete introduction to SEM, including confirmatory factor analysis, mean and covariance models, mediation/moderation and latent growth curves. The course is taught using Mplus, with students having the option of using R instead.

EDP 558: Tests & Measurements

Measurement theory. This course is appropriate at an intermediate and/or advanced level, and is best for individuals with heavy measurement interests (e.g., How much error is in scores we get from a test or measure? What sources of measurement error are present and how substantial are they? How well do items match the ability levels of people in the sample? Do Likert categories function the way we expect them to?). The course covers three theories of measurement: Classical Test Theory (heavy focus on reliability), Generalizability Theory, and Item Response Theory. Each theory includes one or more analyses for test scores as well. Knowledge of ANOVA, correlation, and covariance is assumed.

SUGGESTED COURSE SEQUENCES

NO STATISTICS BACKGROUND

EDP 541 → FSHD 537A or PSYC 510 or EDP 641 → any advanced courses (EDP 646a, FSHD 617C, FSHD 617A, EDP 558, PSY507A)

BASIC STATISTICS BACKGROUND (INTRO COURSE OR TWO IN UNDERGRAD OR PREVIOUS GRAD PROGRAM)

FSHD 537A or PSYC 510 → EDP 641 or FSHD 537B or FSHD 617C → any advanced courses (EDP 646a, FSHD 617C, FSHD 617A, EDP 558, PSY507A)

STRONG STATISTICS BACKGROUND (COMING IN WITH MULTIPLE COURSES)

FSHD 537A or PSYC 510 or EDP 641 → FSHD 537B or any advanced courses (EDP 646a, FSHD 617C, FSHD 617A, EDP 558, PSY507A)

SUGGESTED ADVANCED COURSES BASED ON RESEARCH FOCUS

Individual Differences/Longitudinal Data Analysis - EDP 641, EDP 646a, FSHD 537B, FSHD 617A, FSHD 617C

Measurement/Psychometrics/Latent Variables - EDP 558, EDP 646a, FSHD 617A