

Graduate Student Handbook



 THE UNIVERSITY
OF ARIZONA.

Department of Animal Sciences

Graduate Student Handbook

The University of Arizona
Department of Animal Sciences
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Table of Contents

Introduction	7
Department Facilities	8
Animal Science Faculty	9
Programs of Study	12
Master of Science (Non-Thesis)	13
Master of Science (Thesis)	15
Doctor of Philosophy	18
Minor in Animal Science	23
Program Administration	24
Recruitment & Admissions	24
Student Admittance Procedures	24
Graduate Student Funding Policy	24
Curriculum	26
Graduate Teaching Assignments	26
Graduate Student Progress	27
Appendix I	
Graduate Student Annual Report & Program of Study Form	31
Yearly Update - Year 1	33
Yearly Update - Year 2	35
Yearly Update - Year 3	37
Appendix II	
Selecting a Mentor	39
Appendix III	
The Faculty-Graduate Student Relationship	41
Appendix IV	
Degree Checklists	45
Appendix V	
Laboratory Rotation Form	49
Appendix VI	
Guidelines for Teaching & Research Assistants/Associates	51

Introduction

It is a pleasure to welcome you to the Animal Sciences Graduate Program. The faculty and staff of the Animal Sciences Department are looking forward to working with you during your graduate education. This Handbook will help you meet all of the various requirements for successful completion of an advanced degree. Your major advisor will help you, but you must take the initiative in seeking advice.

You should become familiar with the contents of this Handbook and keep it for reference. The entire mentoring guidebook has been reprinted in this manual for your benefit. The “Handbook for Completing the Steps to Your Degree” from the Graduate College Degree Certification office is provided separately for your convenience.

Every attempt has been made to present all the procedures and requirements for a graduate degree in Animal Sciences as accurately as possible. However, the University of Arizona Graduate Catalog is the only official listing of these procedures and requirements and can be referenced at <http://grad.arizona.edu/academics/catalog>. The information in this handbook is provided for convenience only.

Ronald E. Allen, Ph.D.
Professor & Head

Department Facilities

Campus

The Animal Sciences Department is located in the Shantz Building on the main campus of the University of Arizona. Laboratory facilities provide modern equipment to support the research activities of the graduate faculty. Animal research units are located in Tucson at the Campus Agricultural Center and West Campus Agricultural Center and at the V-Bar-V Ranch located approximately three hours north of Tucson.

Campus Agricultural Center

The Campus Agricultural Center houses several research facilities. The Agriculture Research Complex is a new facility for conducting large animal physiology and nutrition experiments under complete environmental control. The state-of-the-art environmental chambers, surgery suites and associated laboratories make this the most sophisticated environmental research facility in the country. The Meat Science and Livestock Complex provides a state-of-the-art USDA-inspected plant for research and instruction in meat science, food safety and new product development. A covered livestock arena is used for equestrian instruction, the equestrian team, livestock judging events and is also available for teaching or use by the Arizona Cooperative Extension Service, 4-H, FFA and outside groups. The Equine Unit, with approximately 30 horses, is used for instruction and research in equine reproduction and management. Intensive research in nutrition, reproduction and physiology of ruminants is conducted in a newly completed 48-pen unit located at the west end of the Campus Agricultural Center.

West Campus Agricultural Center

The West Campus Agricultural Center is a ruminant feeding facility equipped for feed mixing and preparation, feedlot research, animal breeding and genetics studies. The Center is located approximately five miles from the main campus.

V-Bar-V Ranch

This ranch is located just east of Camp Verde, Arizona, approximately 220 miles north of Tucson. The ranch encompasses 88,000 acres and is home to 550 head of cross-bred cattle that are used to evaluate range livestock production in a diverse ecosystem of forages, assorted wildlife species and predators. Plans are underway to highlight integration of technology management into a sustainable commercial livestock enterprise.

Animal Sciences Faculty

2011 - 2012 Graduate Committee

Sean Limesand, Ph.D., Chair	limesand@ag.arizona.edu	520-626-8903
Doug Reed, MBA	dreed@ag.arizona.edu	520-621-5660
Vince Guerriero, Ph.D.	guerrier@u.arizona.edu	520-621-7764

Faculty & Research Interests

Ronald E. Allen rallen@ag.arizona.edu 520-621-7626 Department Head & Professor – Ph.D Iowa, 1976 Research focuses on skeletal muscle growth and repair with specific emphasis on the regulation of satellite cells. Satellite cells are myogenic stem cells within muscle that have the ability to form new fibers following injury or contribute nuclei to existing fibers during growth. The specific protein growth factors and hormones that regulate the division and differentiation of satellite cells are being investigated.

Mark Arns marns@ag.arizona.edu 520-626-9538 Associate Professor/Equine Specialist – Ph.D Texas A&M, 1989 Research centers on both applied and basic aspects of equine reproduction, including in vitro maturation of spermatozoa, spermatozoa preservation through cold storage and cryopreservation, the influence of seminal fluids and/or its components in maturation and preservation and reproductive management of mares and stallions.

Steve W. Barham sbarham@ag.arizona.edu 520-621-9816 Associate Coordinator in Race Track Industry Program – MBA Portland State, 1981 Responsible for coordinating independent study projects for the Race Track Industry Program (RTIP), teaching courses and assisting students.

Robert J. Collier rcollier@ag.arizona.edu 520-621-7622 Professor – Ph.D Illinois, 1976 Research focuses on effect of environment and heat stress in particular on gene function. Areas of specific research interest include nutritional, physiological, endocrine and cellular responses to heat stress. Practical management models and environmental research facilities are utilized to provide environmental conditions facing livestock in Arizona.

Wendy Davis wdavis@ag.arizona.edu 520-621-5663 Associate Coordinator in Race Track Industry Program – BS Arizona, 1982 Davis is responsible for advising RTIP students, coordinating the internship program and teaching courses. Davis is also the RTIP's point person for the coordination and conduct of the North American Steward/Judge Accreditation Program for flat racing, harness and greyhound stewards/judges.

Vince Guerriero Jr. guerrier@u.arizona.edu 520-621-7764 Associate Professor – Ph.D Syracuse, 1979 Research focuses on the function of heat stress proteins in mammalian tissues and calmodulin regulation of smooth muscle contraction.

Sean Limesand limesand@ag.arizona.edu 520-626-8903 Assistant Professor – Ph.D Colorado State, 2000 Research focuses on fetal development and growth, understanding how aberrant fetal nutrient and/or endocrine factors lead to postnatal complication or the fetal origins of adult disease. Seeks to identify mechanisms that alter pancreatic structure, physiology and metabolism in intrauterine growth restricted offspring to provide treatment strategies.

John A. Marchello jam@ag.arizona.edu 520-318-7021 Professor – Ph.D Colorado State, 1965 Projects emphasize lipid metabolism in the ruminant, carcass composition and consumer acceptance of beef.

F. Douglas Reed dreed@ag.arizona.edu 520-621-5660 Director & Professor in Race Track Industry Program – MBA Arizona, 1997 Reed is responsible for the coordination, promotion and fundraising for the RTIP and hosts the world's largest multi-breed pari-mutuel conference each year.

William A. Schurg bschurg@ag.arizona.edu 520-621-3601 Professor – Ph.D Oregon State - 1981 Projects emphasis is on use of Arizona grown grains and roughages for horses and exercise and physiology for horses.

Adjunct Faculty & Research Interests

Tod C. McCauley todmc@tmilabs.com 520-885-5125 Animal Sciences Adjunct Professor –Ph.D Arizona, 1998 Research focuses on antibody production/characterization, DNA isolation, cDNA cloning, ELISA, embryo culture, Glycoprotein modification/analysis, HPLC Immunoblotting, Immunofluorescence, Immunohistochemistry, In vitro fertilization, Oocyte maturation, Peptide mapping, Radiolabeled ligand-binding assays, Recombinant protein expression/purification, RFLP, RT-PCR, 1- and 2-D SDS-PAGE.

Patricia B. Hoyer hoyer@u.arizona.edu 520-626-6688 Physiology Adjunct Professor – Ph.D Wyoming, 1981 Research includes studies of hormonal regulation of ovarian function in the developing follicle and corpus luteum as relates to normal physiology and toxicology.

David W. Schafer dschafer@ag.arizona.edu 520-646-9113 x 11 Resident Director V-Bar-V Ranch – Ph.D Colorado State, 1991 Research interests include range beef cattle production, genetics of reproduction and estrous synchronization in beef cattle and composite cattle breeding.

Programs of Study

The Department of Animal Sciences offers graduate studies leading to both the M.S. and Ph.D degrees with a major in Animal Sciences. The department is housed in the College of Agriculture and Life Sciences. Broad opportunities exist for course work and research in areas ranging from current animal production techniques to recombinant DNA research on fundamental animal cell physiology problems. **Areas of study include:**

- Beef management
- Dairy management
- Equine management
- Reproduction and breeding
- Genetics
- Animal adaptation
- Muscle biology
- Meat Science
- Race Track Industry Program

Departmental faculty also participate in interdepartmental committees on genetics, nutritional sciences and physiological sciences in graduate programs leading to the Ph.D degree. Two options exist for the M.S. degree. The first is a traditional research based degree culminating in a thesis. The second is a non-thesis option with an emphasis on preparing students for professional opportunities in animal agriculture-related businesses. The non-thesis option includes a professional development project generated through internship or applied, business-related research. The non-thesis option is not designed to prepare students for advancement into the Ph.D. program.

Master of Science (Non-Thesis Option)

Admission Requirements

Admission to the M.S. program depends on completion of a Bachelor's degree. Typical students admitted have a GPA of 3.0 (on a 4-point scale) or higher. A TOEFL score of 550 or higher is required for international students.

Other requirements include:

- Graduate Record Examination (GRE) or RTIP option only: Graduate Management Admission test (GMAT)
- Three letters of recommendation
- Statement of purpose

Course Requirements

A minimum of 30 units are required. All units of coursework in the major field of the student must be at the 500 level or above and up to 6 units of 400-level courses can be applied to the program of study. One half of the required units must be in courses in which regular grades (A, B, C) have been earned. Students must complete a minimum of three units of statistics coursework, three units of business coursework and two units of seminar ANS 596A or two units of ANS 596B for the Race Track Industry Program option. At least five graded units must be from courses offered by the Department of Animal Sciences. Additional requirements for completion of the degree will be determined by the major professor and graduate advisory committee.

Students transferring to the University of Arizona Animal Sciences with graduate credits from other institutions can petition to apply up to 12 graduate credits to the major in this program. However, only graded courses are acceptable and the transfer credits must be approved by the Graduate Committee.

Major Advisor and Graduate Committee

Upon acceptance each student is assigned an advisor in the area of the student's interest. The advisor must be a tenure-track faculty member (Assistant Prof., Associate Prof., or Professor) and will assist the student in selection of their graduate committee. The student's graduate committee will consist of the major advisor and two additional faculty members. At least one of the two additional committee members must be a tenure-track faculty member and one must be from the Animal Sciences Department. The major advisor and graduate committee will supervise curriculum development and the professional development project. The committee will also be responsible for approval of the project report and for the final examination.

Professional Development Project

A professional development project (minimum of 6 units credit) is required of all students in the non-thesis option. The project will be based on internship, special problem or research activities that facilitate the student's preparation for employment in agribusiness. A professional development project report must be submitted to and approved by the student's graduate committee. After making any required corrections, the candidate submits two copies to the Department and the Graduate Committee on or before the date specified in the Graduate Calendar for the candidate's desired degree award date. (See the Graduate Calendar for deadline dates.)

Final Examination

A candidate for the Master's degree must present a seminar on their professional development project and must pass a final oral examination administered by the student's graduate committee. The examination will cover the

project and general topics in the field of study. The result of the examination must be reported to the Graduate College within two weeks. Any candidate who fails the final examination may, upon recommendation of the major department and approval of the Graduate Council, be granted a second examination after a lapse of at least one semester. The second examination is final. The report of successful completion of all requirements (Report on the Final Examination and the Completion of Requirements for the Master's Degree) must be made to the Graduate College at least four weeks before the date on which degrees are awarded, and student must be registered during the semester in which they graduate. (See the Graduate Calendar for deadline dates.)

Master of Science (Thesis Option)

Admission Requirements

Admission to the M.S. program depends on completion of a Bachelor's degree with a major in animal, biological, chemical or physical sciences. Typical students admitted have a GPA of 3.0 (on a 4-point scale) or higher. A TOEFL score of 550 or higher is required for international students.

Other requirements include:

- Graduate Record Examination (GRE) or RTIP option only: Graduate Management Admission test (GMAT)
- Three letters of recommendation
- Statement of purpose

Undergraduate preparation must include:

- Three units of college-level algebra (calculus recommended)
- One year each of general biology and organic chemistry with laboratories in each
- Advanced courses in animal science (i.e. animal behavior, animal nutrition, meat science) anatomy and physiology, physics, analytical chemistry and biochemistry are recommended.

Under special circumstances students may be admitted with deficiencies in undergraduate courses that will be made up, without graduate credit, during the graduate program.

Course Requirements

A minimum of 30 units are required. All units of coursework in the major field of student must be at the 500 level or above and up to 6 units of 400 level courses can be applied to the program of study. One half of the required units must be in courses in which regular grades (A, B, C) have been earned. Students must complete a minimum of three units of statistics coursework, three units of physiology coursework and two units of seminar (ANS 596.) At least five graded units must be from courses offered by the Department of Animal Sciences. Additional requirements for completion of the degree will be determined by the major professor and graduate advisory committee.

Students transferring to the University of Arizona Animal Sciences with graduate credits from other institutions can petition to apply up to 12 graduate credits to the major in this program. However, only graded courses are acceptable and the transfer credits must be approved by the Graduate Committee.

Major Advisor and Graduate Committee

Upon acceptance each student is assigned an advisor in the area of the student's interest. The advisor must be a tenure-track faculty member (Assistant Prof., Associate Prof., or Professor) and will assist the student in selection of their graduate committee. The student's graduate committee will consist of the major advisor and two additional faculty members. At least one of the two additional committee members must be a tenure-track faculty member and one must be from the Animal Sciences Department. The major advisor and graduate committee will supervise curriculum development and the thesis research. The committee will also be responsible for approval of the thesis and for the final examination.

Thesis Requirements

We are now accepting theses and dissertations electronically in PDF format. (Supplemental files may be submitted in a variety of formats.) Students may submit their approved thesis or dissertation at <http://dissertations.umi.com/arizona/>. Full instructions are available at this site as well as a tool to convert WORD or RTF file to PDF. Electronic submissions will save students the expense of special paper and printing. It also allows for more creative options such as streaming video, music, etc. There is no additional charge for electronic submissions nor are there copyright or policy charges. Technical assistance is available online at the above site or at the Info Commons in the library. There are only minor changes in the Dissertation Manual to accommodate electronic submissions: http://grad.arizona.edu/gcforms/ETD_Diss_Manual.pdf

Final Examination

A candidate for the Master's degree must present a seminar on the thesis research and must pass a final oral examination administered by the student's graduate committee. The examination will cover the thesis and general topics in the field of study. The result of the examination must be reported to the Graduate College within two weeks. Any candidate who fails the final examination may, upon recommendation of the major department and approval of the Graduate Council, be granted a second examination after a lapse of at least one semester. The second examination is final. The report of successful completion of all requirements (Report on the Final Examination and the Completion of Requirements for the Master's Degree) must be made to the Graduate College at least four weeks before the date on which degrees are awarded, and student must be registered during the semester in which they graduate. (See the Graduate Calendar for deadline dates.)

Master's Degree Program Timeline

Year 1

1. Develop a proposed PLAN OF STUDY in consultation with your major professor by the end of the first semester. This will establish a set of courses that are required for the program.
2. If you have elected or the graduate committee has suggested lab rotations, meet with the two or three faculty you have selected and design the goals of the rotation. Submit the completed lab rotation form upon completion.
3. Submit the annual progress report in February.
4. Submit the PLAN OF STUDY to the graduate Degree Certification Office during the second semester.
5. For a M.S. degree, you should complete most of your course work by the end of the first year.
6. You must select an examining committee in consultation with your major professor. You should schedule a meeting of all committee members before the end of the first year.

Year 2

1. Submit annual progress report in February.
2. M.S. Students should finish their research by the middle of the second year and complete a thesis by the end of the second year. Consult the Graduate College web page for forms and dates.

Doctor of Philosophy

Admissions Requirements

Students are usually admitted to the Ph.D. program after completing the Master's degree. Students with M.S. degrees from other universities are encouraged to apply. Either a B.S. degree or a B.S. with a Master's degree in animal, biological, chemical or physical sciences is recommended. The M.S. requirement may be waived for unusually qualified candidates, but a M.S. degree is strongly recommended. Students must have a GPA of 3.0 or higher (on a 4.0 scale) in their Master's work.

Courses required for admission include:

- One semester (3 units) each of biochemistry, general physiology and statistical methods
- One year (8 units) of organic chemistry with laboratory
- Under special circumstances applicants may have a limited number of deficiencies.

Student transferring to the University of Arizona with graduate credits from other universities can petition to apply up to 12 graduate credits to the major in this program, but only graded courses are acceptable.

Major Advisor & Graduate Committee

The graduate committee consists of at least five members: the dissertation advisor, two graduate faculty members from Animal Sciences and two members from the department of the student's minor area of study. Four of the five committee members, including the advisor, must be tenure track faculty members (Assistant Prof., Associate Prof., or Professor.) In appropriate instances, a faculty member from an outside department other than that of the minor area may be substituted for one departmental participant. Such an appointment requires approval of the Dean of the Graduate College via petition.

Program of Study & Course Requirements

The equivalent of at least six semesters of full-time graduate study is required for the Ph.D. A minimum of 36 units of course work in the area of the major subject, 9 units in the minor subject and 18 units of dissertation must be completed. Graduate credit earned at other approved institutions, if accepted by the major department and the Graduate College, may be counted toward the requirements of this degree.

Students must meet the minimum requirements established for the Master's degree in Animal Sciences. Additional required graduate courses are: three units of statistical design; three units of biochemistry (a grade of C or above must be earned if an undergraduate level course is taken); and two units of seminar (ANS 596.) All required units of credit in the major must be at the 500 level or above at the University of Arizona (or, in the case of transfer units, their equivalent at other institutions.) Six units of 400level credit taken at the University of Arizona may be used in the minor but will not receive graduate credit or be calculated in the graduate GPA. At least 23 units must be in courses in which regular grades (A, B, C) have been earned. A maximum of 10 units of individual studies (599, 699, 900) will be allowed toward the Ph.D degree. Additional requirements for completion of the degree will be determined by the major professor and the student's graduate advisory committee but must include a minimum of six units from departmental graduate courses.

The student's graduate committee advises the student, helps plan and approves the Doctoral Degree Study Program and evaluates the student's progress during all phases of his/her training. Usually at the end of the first year, the student files the Doctoral Degree Study Program (this form is available from the Graduate College.)

The student and his/her advisor usually plan the course work for the doctoral degree in consultation with the student's graduate committee. This is usually the basis for the initial graduate committee meeting.

A Qualifying Examination, administered by the student's graduate committee is required prior to filing of the study program (see below) with the Graduate College.

The overall Plan of Study, once developed by the student and the advisor and approved by the student's graduate committee, must be approved by the Head of Animal Sciences and the minor department before submission to the Graduate College. (See the Graduate Calendar for deadline dates.)

Academic Performance

The Graduate Catalog states that "No student will be recommended for award of an advanced degree unless he/she has achieved a grade average of 3.0 or better: (a) on all work taken for graduate credit and (b) on all work included specifically in his graduate program."

It should be understood that any student who fails to achieve a GPA of 3.0 for two consecutive semesters is in very serious academic trouble. The graduate committee of such a student should meet at the earliest possible time to determine whether the student should be continued or withdrawn from the program.

Comprehensive Examination and Advancement to Candidacy

Before advancement to candidacy for the degree, the student must pass a general comprehensive examination in the chosen field of study. The comprehensive exam will be held when essentially all course work has been completed, not later than three months prior to the date of the final oral examination. This examination will test the student's general knowledge of Animal Sciences and will test in greater depth fields of specialization within the major and minor subjects of study. The comprehensive examination consists of two parts, a written portion covering the major and minor fields and, no later than two months after the successful completion of the first of these portions, an oral portion which shall be conducted before the student's committee. It is recommended that the student arrange a meeting of the examining committee approximately six weeks prior to the proposed examination date. At this meeting the general research interests, background and projected time table for the exam can be discussed. The committee can use this opportunity to inform the student of its general expectations and make suggestions on preparation, such as suggested readings.

The **Written Comprehensive Examination** will consist of 1-3 questions from each committee member. Each committee member will be allotted a three-hour block of time and all questions must be completed within a one-week period. Members submitting the questions will then grade them and determine if the student passed or failed the questions. The student must successfully answer questions from four of the five committee members in order to advance to the oral exam.

The **Oral Comprehensive Examination** is described by the Graduate College as follows: "Upon successful completion of the written examination in the major and minor(s), the Oral Comprehensive Examination is conducted before the examining committee of the faculty. This is the occasion when faculty committee members have both the opportunity and obligation to require the student to display a broad knowledge of the chosen field of study and sufficient depth of understanding in areas of specialization. Although a discussion of proposed dissertation research may be of importance, such a discussion can not be used to satisfy the requirements of the Oral Comprehensive Examination. The examining committee must attest that the student has demonstrated the professional level of knowledge expected of a junior academic colleague."

The Oral Comprehensive Examination must be completed within 3 to 8 weeks after the written portion. The Graduate College will provide a Graduate College Representative on your behalf to be present at the exam, which will last between two and three hours. Should they fail in the first attempt, the student will not be allowed to retake the oral portion of the exam unless the graduate committee approves the request. If the exam is to be retaken, the Graduate College stipulates a four-month waiting period.

Oral Comprehensive Examinations must be scheduled through the department. The student will be responsible for going online and filling out the **Results of Oral Comprehensive Exam** form at <http://grad.arizona.edu/forms> and obtaining the appropriate pre-exam signatures. They will then take the form to the exam where the committee will record the results and provide their signatures. A representative of the committee will bring the form to Admin 316 within 24 business hours from when the exam has been completed.

When the student has an approved doctoral Plan of Study on file, has satisfied all course work, language, and residence requirements, and passed the written and oral portions of the Comprehensive Examination, he or she must file a Committee Appointment form. This application must be submitted to the Graduate Degree Certification Office as soon as requirements are met but no later than six months before the Final Oral Defense Examination is scheduled. Deadlines for the submission of paperwork pertaining to doctoral programs are available online at Deadlines for Completion of Degree Requirements (<http://grad.arizona.edu/academics/degree-certification/deadlines-for-graduation>). The “Committee Appointment Form” is available online (<http://grad.arizona.edu/academics/degree-certification/forms>).

The Dissertation Proposal

In the semester following the comprehensive exams, students should complete and present to the Dissertation Committee a proposal that provides a compelling rationale and research plan for the dissertation topic. The dissertation proposal is not part of the Comprehensive Examination, but is a key requirement of the Animal Sciences program. It will provide a valuable opportunity for students to develop grant-writing skills and to receive feedback from their committees at a relatively early stage of the experiments. The goal is to develop a rigorous and feasible experimental plan that will serve as a guide for the dissertation research, although the experiments may be modified if necessary as the work progresses. The proposal should be written in the USDA or NIH format but with the following page limitations (single spaced):

- Specific Aims – 1
- Background and literature review – 10
- Experimental Design – 10
- Literature Cited (as necessary)

Many students will already have initiated the dissertation project. Preliminary data are not required, but may be included in the background section of the proposal.

The completed draft of the proposal should be provided to the dissertation committee members for comment and a meeting of the student and the committee should take place at which time the student will field questions about the rationale, design and interpretation of the proposed experiments. Once the dissertation proposal has been revised to the satisfaction of all members of the dissertation committee, the members of this committee will sign the “Dissertation Proposal Approval” form to be provided to the student by the Animal Sciences graduate committee. A copy of this form should then be submitted to the Animal Sciences graduate committee to be included in the student’s annual performance review.

Ph.D. Dissertation

Early in the dissertation process, each student should meet with his/her graduate committee to discuss the scope and progress of the dissertation research. The candidate should meet with the committee each year to review this information and formulate any new plans that seem appropriate. All Ph.D. programs require the completion of a dissertation, which meets required standards of scholarship and demonstrates the candidate's ability to conduct original research. It is expected that the dissertation research will result in at least two peer-reviewed journal articles.

Preparation of the dissertation follows the Graduate College format and style rules (Manual for Theses and Dissertations, which may be purchased at the Bookstore.) **When the dissertation is written, the candidate submits a completed copy of the rough draft to each member of the committee at least three weeks prior to the final examination.**

Defense/Final Examination

The "Announcement of Final Examination" form must be submitted to the Graduate College at least 7 working days prior to the date of the examination, with a copy provided to the Graduate Secretary of the Department of Animal Sciences. Formal defense of the dissertation research constitutes the final examination. This consists of a public seminar by the candidate followed by an oral examination by the graduate committee.

YOU MUST BE REGISTERED TO DEFEND!

To defend during the Fall or Spring semester you must register for a minimum of three graduate units. To defend during the summer, you must register for one unit during either summer session. These unit requirements are the same for the semester you finally submit the dissertation paperwork as well.

Final Copies of Dissertation Document

Following the examination and at least two weeks prior to the Library deadline, the candidate submits to the Graduate College for review a final copy of the completed dissertation (approved and accepted by the Animal Sciences Department and the members of the examining committee,) the approval page, Statement by the Author and special abstract of 350 words or less and the Notice of Completion of Final Examination and Dissertation Requirements. After making any required corrections, the candidate submits two completed and signed copies to the Graduate College. A degree candidacy and dissertation fee must be paid to cover the cost of processing. **The student is required to provide a bound copy of the dissertation to the Department of Animal Sciences and the major advisor.**

For dissertation submission deadlines go to <http://grad.arizona.edu/academics/degree-certification/deadlines-for-graduation>

Ph.D. Degree Program Timeline

Year 1

1. Develop a proposed PLAN OF STUDY in consultation with your major professor. This will lay out a set of courses that are required for the program.
2. If you have elected or the graduate committee has suggested lab rotations, meet with the two or three faculty you have selected and design the goals of the rotation. Submit the completed lab rotation form upon completion.
3. Submit the annual progress report in February.

Year 2

1. You must select an examining committee in consultation with your major professor. You should schedule a meeting of all committee members early in the second year. For Ph.D. students, three faculty are selected from Animal Sciences and two faculty are selected from the minor committee.
2. Submit the annual progress report in February.
3. Submit the PLAN OF STUDY to the graduate Degree Certification Office during the third semester.
4. Complete most course work by the end of the second year.
5. Complete the Comprehensive Exams. Remember the appropriate forms and dates.

Year 3

1. Meet with your committee in order to ensure progress toward your degree.
2. Submit the annual progress report in February.
3. Dissertation Proposal completed and approved by committee
4. Submit all forms and be knowledgeable concerning dates.
5. By the end of the second semester, students should have completed their dissertation. Penultimate copies of your dissertation must be submitted to committee members at least three weeks prior to the scheduled final exam.
6. Upon completion of your final exam, two copies of your dissertation manuscript must be submitted to Degree Certification at least three weeks prior to graduation.

Minor in Animal Sciences

The Ph.D. minor in Animal Sciences requires eight graduate units (six of which must be A, B, C grades.) Specific courses will be determined by the minor department representatives on the student's graduate committee.

Program Administration

The Department of Animal Sciences graduate committee and associated subcommittees will be responsible for administering all aspects of the graduate program, with approval of the Department Head.

These responsibilities include:

- Recruitment & Admissions
- Graduate Student Funding
- Policy
- Curriculum
- Graduate Teaching Assignments
- Graduate Student Progress

Recruitment & Admissions

Solicitation of applicants into the M.S. and Ph.D. program in Animal Sciences will be done by the Department of Animal Sciences by building on the established reputations of the faculty and existing communication networks, including outreach and the Departmental Web Page. The graduate program will also be promoted by judicious use of advertisements, brochures and posters.

The final selection of students to be admitted into the program will be made by the Animal Sciences graduate committee, and will be determined from the ranked order of applicants based on their prior academic performance, relevant experience, letters of recommendation, test scores, statement of interest and other standard measures (but not including mechanism of financial support.)

Student Admittance Procedures

Before additional students are admitted to the program, the current student roster is examined and predications are made regarding the number of students that will require funding (and at what level) for the next year. A potential primary funding source is identified for each continuing student.

Based on projected departmental funding and the current students supported, the number of students to be admitted with funding is established. The graduate committee will then identify both continuing and new students eligible for departmental support. This list will be submitted to the Department Head for approval. Modifications to the list should be approved by the graduate committee.

Graduate Student Funding Policy

The funding policy is designed to enable the Department to accept and retain a sufficient number of students to maintain the viability of the Program. Because of the intense nature of the graduate study, students receiving funding from the department are strongly discouraged from seeking additional employment.

The funds utilized by the Department to support graduate stipends are derived from State Research Assistantships, Recruiting Fellowships, Teaching Assistantships, Cowden Scholarships and faculty contributions. In general, the total of these funds dictate the number of students supported and is viewed as the core budget of the Program. Because of the diversity of these funding sources and requirements for accountability, a general fund cannot be established. Funds which have stipulations regarding the type of research training to be supported

will be dispersed to students in qualifying disciplines at the discretion of the graduate committee.

Departmental financial support for graduate students shall be no more than two years (four semesters) for M.S. candidates and four years (eight semesters) for Ph.D. candidates entering the program with an M.S. from another institution. Departmental financial support for students obtaining both a M.S. and Ph.D. from Animal Sciences in succession shall be no more than five years total. Support for longer periods may be provided by major professors from grant monies but not from departmental or Cowden Fellowship funds. Departmental support will be provided for all qualified graduate students during their first year of study except in cases where a mentor wishes to fully fund the student in the first year, deferring the one year of full departmental support.

Funding for students beginning their second year of study will become the partial responsibility of the major professor. The portion of funding to be provided by the major professor in the second and subsequent years shall not exceed 50% of the total stipend to be received by the student. Major professors should develop budgets with the expectation of contributing 50% of the total stipend. This amount shall be established by the graduate committee in the Spring semester when the number of incoming students has been established.

In the event that a student's advisor suffers a loss of funding, an alternative source of funding from within the department should be sought. In the event that alternative funding cannot be secured, the graduate committee will attempt, but not guarantee, to provide support on an interim basis for that student.

The current funding procedures and policy of the Program are outlined below:

Stipend Levels:

A stipend level request is submitted to the Dean of the Graduate College in the Fall semester. Once stipend levels are established, regular funding sources are examined and applications are submitted to the Graduate College for recruiting and other fellowships.

Pre-doctoral Fellowships:

The Department also has a system to reward those students who personally enter into competitions for support (e.g., individual fellowships from outside agencies). In the event that a student is awarded at least 50% of funding from outside agencies, the department and/or mentor will continue to provide 50% of the student's funding. Any funds awarded to the student by the outside agency, above the 50% of departmental support levels are to remain with the student as a "bonus," upon approval from the Graduate College.

Graduate Stipend Requirements:

The graduate stipend provided by the Department of Animal Sciences, the State of Arizona or the Cowden Fellowship is intended as a 12-month stipend. The responsibility of the student in accepting this stipend is to carry out their studies and research over the full 12-month calendar year. If the student accepts the full Department/State stipend he/she cannot supplement that stipend in a fashion that detracts from the full commitment to the department. If the student receives only partial support from the Department/State that stipend can be supplemented (by the advisor) to the level of full support but not from receiving any payment of any kind (lump sum, hourly wages, etc.) from their advisor or other University faculty members in excess of the stipend level set by the department each year, unless the student has personally entered into the competitions outlined above.

Students on departmental stipends are expected to devote a minimum of 20 hours per week to research/teaching/extension activities assigned by the student's advisor or the Department. This does not include the time in class and may not include time involved on thesis or dissertation research. Note: students are expected to work during

times between academic sessions. The times between sessions are **not** holidays or vacation days. All requests for leave must be approved by the student's advisor at least two weeks prior to the absence. Normally leave is accumulated at the rate of one day per month of employment. The policy does not apply to students who do not receive Department/State funds.

Residency:

Because funding sources for graduate stipends are not constant, no guarantee can be made for out of state tuition waivers. As such, students should attempt to establish residency immediately after arriving in the state and continue to seek/maintain residency until the degree is obtained.

Funding for Students Enrolled in Interdisciplinary Programs (IDP):

Given the need to maintain a viable, quality Animal Sciences Graduate Program, the Department of Animal Sciences will only consider funding graduate studies for a student enrolled in IDPs for a single year. In those cases, the following criteria must be met:

1. The student has exceptional qualities
2. The student carries out his/her research in the laboratory of a member of the Animal Sciences Department (this would include adjunct faculty)
3. The research topic can be considered as an important contribution to "Animal Sciences" as determined by the graduate committee.
4. Ultimately the credit for research contributions (publications, presentations at national meetings, etc.) will go to the Animal Sciences Department

After one year of departmental funding, the advisor/mentor and/or IDP become responsible for funding the student. Students that are enrolled in Animal Sciences and want to transfer to another department must notify the graduate committee prior to initiation of the transfer. Upon transfer, funding becomes the responsibility of the other department and/or advisor.

Curriculum

Graduate curriculum and requirements are established by the Department and must be consistent with Graduate College requirements.

Laboratory Rotations:

A student may request a series of laboratory rotations (maximum of three different laboratories.) Laboratory rotations will be approved by the graduate committee and are not to exceed two semesters. When students complete a period in a single laboratory they must submit a laboratory report form to the head of the graduate committee (see appendix V.) The purpose is to ensure a quality laboratory experience for the student.

Graduate Teaching Assignments

Teaching experience is an important part of the graduate training program in the Department of Animal Sciences. All graduate students shall participate in the teaching activities of the department in one course per year, and all students must go through the University's GAT orientation. No teaching will be assigned the first semester of a student's program, the last semester of the M.S. program or the last year of the Ph.D. program. Graduate student responsibilities will include exam proctoring, grading exams and homework, laboratory assistance in lab

courses, limited lecture presentations (i.e. one or two lectures in a course) and homework and test development. Teaching assignments will be made by the graduate committee, in consultation with the Department Head and the Department Curriculum Committee, prior to the beginning of the fall semester for all graduate students in the Department. Participation of the student in these activities is critical for continued departmental support. Graduate student performance will be evaluated annually by appropriate departmental faculty and the graduate committee. Non-native English speaking graduate students should refer to the Graduate College policies in Appendix IV.

Graduate Student Progress

Annual reports will be provided by all graduate students to the graduate committee (form 1 in Appendix I.) These reports, along with academic performance, will be the basis for establishing which students receive initial and continued financial support from the department. Upon review by the Graduate Committee and upon concurrence with the Department Head, students not making satisfactory progress will not receive continued funding from the program.

Appendix

Appendix I

Department of Animal Sciences Graduate Student Annual Report & Study Program

Student Name:

Date submitted:

Degree sought:

U of A Start Date:

Major:

Calendar year:

Minor:

Expected graduation date:

Year of program:

Thesis/Dissertation Title:

Committee Members

Major Advisor:

Faculty (Major):

Faculty (Major):

Faculty (Minor):

Faculty (Minor):

Additional:

Previous Academic Institutions

B.S.

School:

Major:

GPA:

M.S.

School:

Major:

GPA:

Publications from Previous Institutions:

Signatures

Student: _____

Date: _____

Major Advisor: _____

Date: _____

Department of Animal Sciences

Graduate Student Yearly Update

Year 1

Coursework: List all courses in which you registered, including drops and incompletes. Include the course title & number, the number of units and grade received for each course.

Fall

Spring

Summer

Courses Taught: Please provide course title, number and section.

Fall

Spring

Summer

Dates of Committee Meetings:

Qualifying Exam Completion Date (Ph.D. only):

Scientific Meetings Attended:

Publications:

Grants:

Research Progress:

Department of Animal Sciences

Graduate Student Yearly Update

Year 2

Coursework: List all courses in which you registered, including drops and incompletes. Include the course title & number, the number of units and grade received for each course.

Fall

Spring

Summer

Courses Taught: Please provide course title, number and section.

Fall

Spring

Summer

Dates of Committee Meetings:

Date of Final Exam (M.S.):

Date of Comprehensive Written Exam (Ph.D.):

Date of Comprehensive Oral Exam (Ph.D.):

Dissertation Proposal (Date of Completion – Ph.D.):

Scientific Meetings Attended:

Publications:

Grants:

Research Progress:

Department of Animal Sciences

Graduate Student Yearly Update

Year 3 (Ph.D.)

Coursework: List all courses in which you registered, including drops and incompletes. Include the course title & number, the number of units and grade received for each course.

Fall

Spring

Summer

Courses Taught: Please provide course title, number and section.

Fall

Spring

Summer

Dates of Committee Meetings:

Date of Final Exam:

Scientific Meetings Attended:

Publications:

Grants:

Summary of Dissertation Research Progress:

Appendix II

Selecting a Mentor

Each student is expected to select a mentor by the end of their second semester in the program. A mentor is a faculty member who will serve as an advisor, supporter, tutor, master, sponsor and role model. A mentor is expected to interact with the student on a regular basis providing guidance, advice and the intellectual challenge necessary for the student to complete the degree program. The following suggestions may be of assistance to graduate students in choosing a mentor. The first area has a professional basis and the second a personal basis. The choice of a mentor may be the single most important decision during graduate training.

When considering the professional aspects of your selection of a mentor, the following questions may prove helpful:

- 1. What is this individual's reputation OUTSIDE the University?** Remember, when you have completed your dissertation and you are looking for a position, your mentor's reputation will initially be your reputation.
- 2. Does your prospective mentor have the funding available to support your research for at least three years?** This area is probably the most problematic for most graduate students. The money needed to fund your research project will most likely come from your mentor's laboratory. Also, although your stipend money is relatively stable, the mentor is expected to contribute an amount equal to one half of your stipend to the Animal Sciences Program. Therefore, you will need to know not only the amount of money available for your research, but also the stability of funding.
- 3. How does your prospective mentor's lab operate?** You should critically evaluate the day-to-day operations of the lab and understand the goals of the lab and where you will "fit in." You should also understand the role of your mentor in those operations. Some principal investigators have lab managers or research assistants who run the laboratory. You should know almost as much about these individuals as about your prospective mentor.
- 4. What are the professional requirements of the prospective mentor on such issues as work habits, ethics, sharing of ideas, lab meetings, journal clubs and authorship on papers?**

On the personal side, the answers to the following questions may be extremely helpful:

- 1. Is the personality of my prospective mentor compatible with my own?**
- 2. Is this individual going to be responsive to my needs and, just as important, am I going to be responsive to his/her needs?** When you join a lab, your mentor will have certain expectations of you and these should be identified when evaluating a prospective mentor. By the same token, what are your expectations of your mentor?
- 3. What do other students and faculty think about your prospective mentor?** The collegial relationship of your prospective mentor with others will influence your interaction with other laboratories.

Do not forget the importance of the choice of a mentor and do not make that choice without a great deal of thought. Talk to other people about your prospective mentor and ask probing, but not inflammatory questions. Also, provide yourself with honest answers to both the professional and personal aspects of your decision. Once you have identified a mentor, the Program Chairperson must be informed of this selection in writing by you and your mentor.

Appendix III

The Faculty-Graduate Student Relationship

Introduction

Mentoring is an essential part of graduate education. In fact, in many ways, mentoring is the “heart” of graduate education. The mentor is responsible for ensuring the student becomes sophisticated in a discipline or field of study, is challenged intellectually, learns how to think critically and aspires to create new knowledge. In addition, the mentor is responsible for assisting the student in developing the interpersonal skills needed to succeed in the discipline. Mentoring is distinct from advising because it involves a personal relationship. This relationship includes faculty acting as close, trusted, experienced guides and advocates. The nature of the mentoring relationship is different for each student and depends on experience, personal needs and background (e.g. age, gender, ethnicity, culture.) It recognizes that graduate school includes socialization to the values, norms, practices and attitudes of a discipline. Mentoring gradually transforms the student into a colleague. It produces opportunity and growth for both the mentor and the student.

The task of mentoring is multifaceted. “Mentors are advisors, people with career experience willing to share their knowledge; supporters, people who give emotional and moral encouragement; tutors, people who give specific feedback on one’s performance; information about and aid in obtaining opportunities; models, of identity, of the kind of person one should be to be an academic.” (Zelditch, M., 1990, “Mentor Roles” Proceedings of the 32nd Annual Meeting of the Western Association of Graduate Schools.) These characteristics of mentors combine to provide a broad-based nurturing of the professional and personal development of the graduate student.

The Graduate Council expects that each entering graduate student will be assigned, or will choose, a mentor soon after arrival at The University of Arizona. Early stages of a program of study require many decisions on the part of the student, so it is important that the counsel of a mentor be available from the very beginning. The mentor is expected to interact with the student on a regular basis, providing the guidance, advice and intellectual challenge necessary for the student to complete his or her program. It should be recognized that the specific mentor and the role of that mentor may change over time. Thus, a student may have more than one mentor during the course of a degree program. In practice, a student may have more than one mentor at any given time. That is, although the student may choose a single faculty member as the primary mentor, other individuals may play significant mentoring roles for the student. Having multiple mentors is desirable.

Mentoring is essential to student retention and the quality of the student’s program of study. The Graduate Council expects that each degree-granting unit will have in place a well-defined and active mentoring program, and that it will be reviewed on a regular basis to ensure its effectiveness. New faculty members should be instructed about the mentoring process during their departmental orientation. Recognizing that mentoring is such an essential part of faculty responsibility, the Graduate Council expects that it will be considered in all faculty merit evaluations and tenure-promotion decisions. Further, the Graduate Council acknowledges that although this position paper is geared mainly toward the mentoring of graduate students, faculty responsibilities for post-graduate mentoring (i.e. for postdoctoral students) should follow many of the same principles.

Activities that are important components of the faculty-student mentoring relationship are discussed below. The Graduate Council recognizes that the importance of each of these activities will vary with discipline, type of degree being pursued and time as the student progresses through his or her program of study. The activities

described here are intended to be suggestions. They represent dimensions of a good mentoring program. However, in the final analysis, the role of the mentor as advisor, supporter, tutor, master, sponsor and model will be more than the sum of these activities and will be highly individualized.

The activities discussed are divided into three parts. The first considers some of the responsibilities of the faculty member and the department. The second considers some of the responsibilities of the student. The third considers formal academic experiences that are relevant to mentoring. (For the purposes of this handbook, the responsibilities of the department have been omitted.)

Responsibilities of the Graduate Student

Take Charge of Program of Study

The graduate student is an active participant in the mentoring relationship. The student should keep in mind the responsibilities of the mentor and the department discussed above and at the same time take final responsibility for tailoring his or her program of study. Thus, while seeking guidance from a mentor, the student should make sure the program of study meets his or her needs. The student should keep track of requirements and deadlines. In particular, the student should be well-informed about the policies and procedures found in the Graduate College Catalog. He or she should be self-motivated and take initiative to capitalize on educational opportunities. It is important that the student strive to be as independent as possible, though recognizing that independence will increase over the course of the program of study. The student should consult often with student peers who have gone through various stages of a program of study and seek options about the pros and cons of the various options available.

Appraise Mentor of Progress and Problems

Communication with the mentor is essential. The student should keep the mentor fully informed of his or her program status. It is important that the student tell the mentor as soon as problems arise. The student should be honest and open in sharing information. The mentor may have solutions for many of the student's problems or know what resources are available to assist with problems.

Contribute Knowledge

Students tend to see themselves as on the receiving end in the mentoring relationship. It should be remembered, however, that the student has a great deal to offer to the mentor. The student should contribute to the knowledge base of the mentor, peers and department. The act of contributing will boost self-esteem, gain additional respect and stimulate the surrounding intellectual environment. Good mentors envision that their students will ultimately surpass them. Thus, good mentors welcome contributions from students and value them as indication of their success as teachers.

Seek Multiple Mentors

It is unlikely that one mentor can fulfill all of the student's needs. Therefore, the student should seek out multiple mentors during his or her program of study. These may be chosen to fulfill different intellectual needs, provide specific training opportunities in various skills (e.g. certain laboratory techniques) and obtain emotional support. The search for appropriate mentors need not be restricted to faculty members. Other graduate students can provide significant mentoring experiences. Postdoctoral students, in particular, are often a rich resource for mentoring activities.

Change the Relationship if Necessary

For one reason or another, not every faculty-student mentoring relationship will be the best match. If the student believes the mentoring relationship is not satisfactory, then it may be appropriate to terminate the relationship and find another primary mentor. Or, in the case where the student may change the area of emphasis in the program of study, it may be beneficial, or even necessary, to seek another primary mentor. There are perfectly good reasons for the entire program of study under a single mentor. However, when a change in mentors may seem appropriate, the student should discuss it with the primary mentor and those who might assume the role as new mentor.

Formal Academic Experiences

Certain formal academic experiences fit well into the faculty-student mentoring relationship. Four are briefly discussed here as examples that mentor and departments may find useful in the mentoring process.

Introduction to the Discipline

The introduction-to-the-discipline, or core, course is usually designed to bring together all first-year graduate students on a regular basis. Typically it entails meeting at least once a week with one or two faculty members who supervise the course. Students may discuss with faculty the appropriate journals within the discipline and obtain insights concerning the evaluation and reporting of published literature. Students may make oral presentations, followed by critiques from faculty and other students. They may engage in generic discussions about various subdivisions of the discipline. Or, they may be involved in other activities that provide a broad understanding of the discipline.

Independent Study or Tutorial

An independent study or tutorial is designed to foster faculty-student interaction and to guarantee that the student obtains a breadth of knowledge in a variety of areas within his or her discipline. Several independent studies may be completed prior to the preliminary examination. The student typically meets with the faculty member on a regular basis. Such meetings may be used for in depth discussions of designated topics. Independent studies may involve reading assignments, library work or other relevant activities.

Presentation Seminar or Colloquium

It is important in the preparation of students for professional activities that they gain experience in giving presentations of their own work in front of general audiences. Toward this end, it is a requirement in many departments that each doctoral student (and, in some cases, master's student) give at least one seminar each year after the first year in residence. The goal is to provide the student with an opportunity to learn how to present material publicly. As such, the seminar presentation prepares the student for presentations at professional meetings, job interviews or other speaking situations in the discipline. Student seminars also foster collegiality.

Laboratory Rotation

In certain disciplines, the laboratory rotation is an important formal academic experience. In a laboratory rotation, the student spends an extended period of time conducting research in the laboratory of a designated mentor. The typical student will rotate through several laboratories during the course of a program of study, giving him or her a breadth of experience and providing information that may be useful in the task of choosing a thesis or dissertation director. The laboratory rotation is an important mechanism because it provides the student with hands-on experience and the opportunity to interact with several faculty members within the discipline.

Summary

The Graduate Council believes that every department should have in place a structured mentoring program and that this program should include an appropriate infrastructure (e.g. practices, procedures, courses) to integrate students into the discipline fully. Strong mentoring increases student satisfaction, improves student retention, decreases the time-to-degree and produces a higher quality graduate. Mentoring is at the heart of graduate education. The Graduate Council urges that it be encouraged, practiced and fostered at the University of Arizona.

Appendix IV

Doctoral Degree Checklist of Items to be Filed

1. *Degree Certification Forms* Most forms need to be filled out online by logging in to our My GradColl system with your NetID. These forms are designed to be filled out by the student. <http://grad.arizona.edu/forms>
2. *Annual Progress Report* should be filed with the Animal Sciences Department in February of each year.
3. *Oral Comprehensive Examinations* must be scheduled through the department. The student will be responsible for going online and filling out the Results of Oral Comprehensive Exam form at <http://grad.arizona.edu/forms> and obtaining the appropriate pre-exam signatures. They will then take the form to the exam where the committee will record the results and provide their signatures. A representative of the committee will bring the form to Admin 316 within 24 business hours from when the exam has been completed. Written exams must be completed before the oral preliminary exam is taken.
4. *Committee Appointment Form* is submitted to the Graduate College after successful completion of the Oral Comprehensive Exam, but no later than six months before the proposed completion date.
5. *Dissertation (Penultimate Draft)* must be submitted to each member of the Graduate Committee three weeks prior to the final examination.
6. *Announcement of Final Examinations* must be filed with the Graduate College no less than 7 working days before the requested date of this examination and must be accompanied by a penultimate draft of the Dissertation for review by the Graduate Representative. Public seminar is also scheduled for presentation of dissertation research.
7. *Dissertation (Final Copy)*: Following the final examination, the candidate submits to the Graduate College for review a final copy of the completed Dissertation (approved and accepted by the Committee on Animal Sciences and the members of the examining committee) the approved pages and special abstract along with the Notice of Completion of Final Examination and Dissertation Requirements. After making any required corrections the candidate submits two completed and signed copies to the Graduate College. A bound copy of the Dissertation must also be submitted to the Committee on Animal Sciences. A dissertation checklist is available from the Graduate Secretary.

The appropriate times for the filing of the above items, as well as other requirements, are summarized in the Deadlines for Doctoral Degree Candidates issued by the Graduate College each year and can be found at <http://grad.arizona.edu/academics/degree-certification/deadlines-for-graduation>

TIMELINE FOR MASTER'S / SPECIALIST CANDIDATES

Revised 1/17/2012

Submit Masters/Specialist Plan of Study . There are fees associated with this form.	2nd Semester in Residence or your departmental deadline, if earlier			
Transfer credit Submit 'Evaluation of Transfer Credit'	By the end of first year			
Graduation Term	Spr 2012	Sum 2012	Fall 2012	Winter 2012
Degree Requirements All degree requirements must be met by this date (including comprehensive exam, defense/revision of thesis, coursework, etc.) OPTIONAL in most departments. If archiving, your thesis is also due on this date.	May 11, 2012	August 9, 2012	December 12, 2012	January 8, 2013

TIMELINE DOCTORAL CANDIDATES

Submit Doctoral Plan Of Study . There are fees associated with this form.	3rd Semester in Residence or your departmental deadline, if earlier			
Transfer credit Submit 'Evaluation of Transfer Credit'	By the end of first year			
Schedule the Oral Comprehensive Examination with your department. The Results of Oral Comprehensive Exam for Doctoral Candidacy form must be returned to the Graduate College within 24 business hours of the exam. There are fees associated with this form.	As soon as your course work is completed			
Submit Committee Appointment Form	as soon as COMPS are passed			
Graduation Term	Spr 2012	Sum 2012	Fall 2012	Winter 2012
Last suggested day to take the Final Oral Examination/Defense. The Announcement of Final Oral Defense is due at least seven (7) working days prior to the date of the examination.	April 17, 2012	July 23, 2012	November 19, 2012	January 4, 2013
Deadline to submit dissertation to Degree Certification	April 30, 2012	August 9, 2012	December 3, 2012	January 8, 2013

Go to <http://grad.arizona.edu/academics/degree-certification/deadlines-for-graduation> for most current timelines.

DOCTORAL DEGREE CHECKLIST

<http://grad.arizona.edu/degrecert/>

You must complete steps one through five in that order before Graduate College Degree Certification can verify that you have completed your requirements and before your degree can be awarded. Please see deadlines for filing these forms at:

<http://grad.arizona.edu/grad/current-students/deadlines> .

You can find all the forms you need at <http://grad.arizona.edu/grad/current-students/forms>

1. **___Completed Step 1** Doctoral Plan of Study: (due 3rd semester in residence)
<http://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/plan-of-study>
Help on your Doctoral Plan of Study:
 - Preparing Your Doctoral Plan of Study: <https://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/plan-of-study>
 - Credit Requirements and Transfer Credit: <https://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/credit-requirements-and-transfer-credit>
 - Restrictions on the use of non-degree coursework: <https://grad.arizona.edu/grad/prospective-students/admissions-requirements/non-degree>
2. **___Completed Step 2** The Comprehensive Examination for Doctoral Candidacy: (take as soon as you are ready) see <http://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/comprehensive-examination>
Help configuring your comprehensive committee:
 - The Comprehensive Committee : <http://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/comprehensive-examination>
3. **___Completed Step 3** Committee Appointment Form: (file as soon as Comps are passed) <http://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/advancement-to-candidacy>
4. **___Completed Step 4** The Final Oral Defense Examination: (as soon as you are ready) see <http://grad.arizona.edu/grad/current-students/deadlines>
Help configuring your dissertation committee:
 - The Dissertation Committee <https://grad.arizona.edu/grad/dissertation-committee>
5. **___Completed Step 5** The Dissertation: (as soon as your Defense is passed and your requested revisions have been made) <https://grad.arizona.edu/grad/current-students/program-requirements/doctor-of-philosophy/dissertation> Help on submitting your dissertation:
 - Submission of the Dissertation <http://dissertations.umi.com/arizona/>
 - Tell me about Copyrighting: <http://grad.arizona.edu/degrecert/copyrighting>
 - What else do I do?: <http://grad.arizona.edu/degrecert/submitted-now-what>

Master's Degree Checklist

<http://grad.arizona.edu/degrecert/>

You must complete steps one and two in that order before Graduate College Degree Certification can verify that you have completed your requirements and before your degree can be awarded. Please see Deadlines for filing these forms at: <http://grad.arizona.edu/grad/current-students/deadlines>. You can find all the forms you need at: <http://grad.arizona.edu/grad/current-students/forms>

Completed Step 1 (Due 2nd semester in residence or your departmental deadline if earlier)

1. Master's Plan of Study <https://grad.arizona.edu/gc/myHomes/home>
 - Preparing Your Master's/Specialist Plan of Study :
<http://grad.arizona.edu/degrecert/mpos>
 - Credit Requirements and Transfer work
<http://grad.arizona.edu/grad/current-students/program-requirements/masters-degrees/credit-requirements>
 - Restrictions on the use of non-degree coursework:
<http://grad.arizona.edu/grad/prospective-students/admissions-requirements/non-degree>

Completed Step 2 (Due the week after finals ends, earlier if you need special verification that your requirements have been completed.)

2. 'Completion of Degree Requirements' form
<http://grad.arizona.edu/grad/current-students/forms>
 - Master's Committees: <http://grad.arizona.edu/grad/current-students/program-requirements/masters-degrees/completion-of-masters-requirements>

Appendix V

Laboratory Rotation

Student:

Date:

Before starting the rotation the student and mentor must submit to the Program Committee a brief outline of the anticipated time course of the rotation, and the work to be performed. Upon completion of the rotation the student and mentor should submit a one paragraph summary of the work and training accomplished. The student and mentor each must also submit, on separate forms, a confidential evaluation of the rotation.

Outline or Evaluation:

Signatures

Major Advisor: _____ Date: _____

Student: _____ Date: _____

Appendix VI

Guidelines for Graduate Teaching & Research Assistants/Associates

Approximately 1,200 graduate students are employed as graduate teaching and research assistants. Graduate teaching and research assistantships are available through departments. The primary purpose is to provide undergraduate students excellent classroom and laboratory instruction. In addition, they provide graduate students with training for careers in teaching and research. For teaching assistants, the work involves teaching and related activities such as reading and grading papers, leading discussions, and instructing and guiding students in the lab. For research assistants, the work involves research-related activities.

At the UA, Graduate Assistantships/Associateships in Teaching (GATs) are salaried positions, in contrast to fellowships or stipends. They are a means of monetary support for graduate students and offer the opportunity to develop teaching skills. Their primary purpose is to provide undergraduates excellent classroom and laboratory instruction.

GATs in the UA are given responsibility for a significant proportion of the total undergraduate instruction. Responsibility for their selection, training, supervision, and evaluation rests in each academic department, with oversight by the Graduate College. The Graduate College has been given the mandate to assure that the departments comply with the Arizona Board of Regents' policy for GATs.

Board of Regents' Mandate

At its October 1985, meeting, the Arizona Board of Regents adopted the following policy:

1. Each university will develop and maintain programs to provide training in basic teaching methods and skills for all graduate teaching assistants and associates.
2. Each university will require that an appropriate regular faculty member formally assess the teaching performance of each graduate teaching assistant and associate every semester and submit a written report of the assessment to the department chair and to the graduate teaching assistant or associate.
3. Each university shall require the department chair or other appropriate administrator to certify in writing that each graduate assistant or associate has clearly demonstrated the high level of oral and written skill in English necessary for effective classroom teaching.

Status and Definitions

Primary Lecturer: GAT is responsible for syllabus and materials design, course planning, and grading, under supervision and within the parameters of a basic course framework provided by the department or major professor.

Discussion Leader: GAT attends and participates in a large lecture course and is responsible for leading a small recitation or discussion section(s).

Assistant Lecturer: GAT works in the classroom with, or under the close supervision of, a faculty member. He or she is responsible for a substantial portion of class lecturers.

Grader or Scorer: GAT has little or no contact with students but is responsible for scoring or grading assignments submitted to primary professor.

Lab Assistant: GAT is responsible for instruction in a laboratory in fields such as science and engineering, or in a practical in a field like music.

Research Assistant/Associate (RA): Graduate student assists a faculty member with academic research.

International Teaching Assistant/Associate (ITA): The Graduate Council Guidelines provides specific policies for training, supervision, and evaluation of GATs and RAs for whom English is not the first language.

Terms of Appointment

A Graduate Assistant must be currently enrolled in a graduate degree program at the University of Arizona and must maintain a 3.0 cumulative grade point average for all University graduate credit courses. A Graduate Associate must be a student enrolled in a doctoral degree program at the University and have either a master's degree or 30 units toward the doctoral degree, and must also maintain a 3.00 cumulative grade point average for all University graduate credit courses. Students must be recommended by a department in order to receive an appointment. See "Academic Eligibility" for more information.

The work load hours range over five categories, from 1/4-time to 3/4-time (20-60 hours/pay period). All assistants are required to carry a minimum of six units of graduate from 10-16 hours depending on the number of hours of work. Nonresidents of Arizona are eligible for nonresident tuition waivers. See "Enrollment Limitations" for more information.

This information comes from the Graduate College publication, Graduate Assistantships/Associateships Hiring Manual.

Academic Eligibility

Graduate Assistants must:

1. Be a student admitted and enrolled in a graduate degree program at UA. International Special students may hold an assistantship for no more than one year. Any Graduate Assistant in this status will, however, be subject to the same enrollment and academic requirements as any degree candidate holding an assistantship.
2. Have an admitting GPA of 3.0 or higher if a new student, or maintain a 3.00 cumulative grade point average for all UA graduate credit courses.

Graduate Associates must, in addition to the above:

1. Be enrolled in a doctoral program with either a master's degree or 30 units of doctoral work at the UA.
2. Retain associate status unless converted to a nondoctoral degree program as a Graduate Assistant or change hiring departments.

Employment Status and Limitations

Graduate Assistants and Associates are classified as student employees. As such, they are:

1. Limited to no more than 30 hours per week total campus employment (including Supplemental Compen-

sation) during periods of enrollment to maintain student employee status. Employment for International Students on an F-1 or J-1 visa must be limited to 20 hours per week while school is in session (Summer Session is voluntary and is not limited). This is a Federal regulation and the department is responsible for adhering to it. For any questions regarding this regulation, please contact International Student Programs and Services, 621-4627.

2. Exempt from deductions for Social Security taxes (FICA) during semesters or summer sessions when officially enrolled. Minimum enrollment for the exemption is six (6) units per semester for fall/spring or three (3) units per summer session.
3. Not eligible for participation in the University of Arizona employee benefits program or the State of Arizona Retirement Program.
4. The maximum number of hours per week employment, within the 30 hours/ week allowable, varies by enrollment status. Please see the chart on the following page for specific limits. Officially audited courses, dissertation, thesis, undergraduate courses, and supplementary registration are included in this total.
5. Students may hold appointments as GATs in a maximum of two (2) departments, simultaneously.

According to Arizona Board of Regents' policy, Graduate Assistants/ Associates are not eligible for concurrent employment as staff or faculty. They may, however, be eligible for additional compensation on Supplemental Compensation.

Enrollment Limitations

Academic Year (Fall and Spring Semesters):

Minimum Enrollment: Graduate Assistants / Associates are required to enroll for, and complete, a minimum of six (6) units of graduate credit each semester, or a higher number if required by the college. Undergraduate and / or official audited graduate courses are not included in this total. Maximum Enrollment: Maximum unit loads vary depending on the total hours of employment (salaries and supplemental compensation) as follows. Officially audited courses, undergraduate courses, dissertation, thesis, and supplementary registration are included in this total.

Summer Session:

Minimum Enrollment: Graduate Assistants / Associates are not required to enroll during the summer session to maintain student employment. GATs who are not enrolled, or are enrolled for less than three (3) units per session, will have Social Security taxes (FICA) withheld from their paychecks.

Additional Requirements for Graduate Assistants / Associates in Teaching

1. No Commercial Activity: The Graduate Council has ruled that GATs not be allowed to engage in any commercial activity relative to the course with which they are assisting at this University (e.g., selling course materials or conducting paid review sessions for courses in which they are directly involved as a GAT).
2. Assignment to Graduate Level Courses: GATs may not be the instructor of record for classes giving graduate credit. Duties of GATs involved in graduate level classes should be restricted to non-subjective grading, lab setup, web site maintenance, and general advising.

3. Training: All GATs must complete training assignments before assuming direct instructional responsibilities at the UA. Any GAT who fails to comply with all requirements will be violating the conditions of employment agreed to in the Notice of Appointment for Graduate Assistants/ Associates and may not engage in direct instructional contact.

Minimum Training Requirement

1. GATO: All GATs who will have direct instructional contact with students are required to participate fully in a one day Orientation (GATO), sponsored by the Graduate College and coordinated by the University Teaching Center. This orientation provides information on university policies and procedures, as well as professional development opportunities. Students who have previously attended the GATO need not attend again.
2. Departmental Orientation: GATs must receive training within their own department. This will consist of a minimum of eight (8) hours of instruction on the proper execution of the specific instructional duties which they will be assigned. This is to cover specific information relevant to the individual department and course(s) to be taught. Departments shall submit to the Graduate College a copy of their updated departmental training program each year.

English Proficiency

The University Teaching Center assists the Graduate College and the Departments in screening the oral language proficiency of non-native speakers of English who are applying for Teaching Assistantships. International graduate students are required by the Board of Regents to take the SPEAK Test or the TSE Test to be eligible for a Teaching Assistantship position at the University of Arizona. Applicants must have a permission slip filled out by their Department and stamped by the Graduate College and register online to take the test on one of the available dates. The fee for the SPEAK test is \$60.

Departmental Reporting Requirements

1. TA Training Record: Training records are due shortly after the beginning of each regular semester. This report provides the Graduate College with a list of the GATs' class assignments, duties, and name(s) of the supervising professor(s). A sample, summary, or copy of the departmental training material must be submitted with the fall training record.
2. TA Evaluation: Evaluations are due at the end of each regular semester and notifies the Graduate College of the quality of the GATs' performance and fitness for reappointment. GATs without a current evaluation on file are not eligible for rehire as a GAT. GATs receiving low evaluations are not eligible for rehire without prior Graduate College approval.

For any questions regarding GAT training, please contact Julie Treanor at 621-5193 (e-mail: jtreaor@lorax.admin.arizona.edu).

Supervision

Each teaching assistant must be assigned to a faculty member who is responsible for his or her supervision. The faculty supervisor shall provide guidance and direction for the graduate assistant throughout the semester. Faculty supervisors are responsible for evaluating the teaching assistant's performance and the classroom / laboratory environment where he or she teaches and for submitting a complete written evaluation to the department head. Evaluations are then made available to the Graduate College.

Supervisors are committed to the creative and ongoing development of effective pedagogical teaching strategies and effective teachers. Supervision should include, but not be limited to:

1. Direct observation of the GAT in a classroom or laboratory setting.
2. Review of his/her instructional responsibilities.
3. Review of development and use of instructional materials.
4. Scheduling of follow-up meetings at regular intervals throughout the semester to discuss problem areas and ways to improve his/her teaching.

Evaluation

Evaluation and feedback are crucial components of effective teaching and should include both faculty and student input based on the supervisor's direct observation. Feedback from supervisors can serve to improve teaching skills. Faculty supervisors are responsible for evaluating the GAT's performance and the classroom/laboratory environment where he or she teaches, as well as the use of instructional materials. Faculty supervisors are responsible for submitting complete individual evaluation forms for each GAT to the departmental secretary, to be forwarded to the Graduate College with the departmental report at the end of the semester when final grades are due. The supervisor's evaluation shall include a summary of the students' evaluations of the GAT.

GATs whose performance is scored "low" by their supervisors during the first semester are required to undergo additional training by the department of the UTC before the beginning of the second semester or very early in the second semester. GATs who show no improvement in their teaching by the end of the second semester will not be eligible to continue on a teaching assignment. GATs whose graduate GPA falls below 3.00 are also not eligible for further appointments.

GAT performance evaluations may be appealed to the Department Head, and, if not resolved at this level, to the Dean of the Graduate College. Appeals will not be considered beyond the Dean's level, except in cases which allege unlawful discrimination. Such complaints must be filed in the Equal Opportunity and Affirmative Action Office.

From the "U of A Resource Book, A Guide for Graduate Assistants in Teaching and Instructors" provided by the University of Arizona, University Teaching Center on their website at http://www.utc.arizona.edu/tas/resourceguide/table_of_contents_main.htm.