THE ASTRONOMY GRADUATE PROGRAM: FROM A TO Z
(Revised October 18, 2021)

The University of Texas at Austin
Department of Astronomy

Master of Arts in Astronomy (M.A.)
Doctor of Philosophy in Astronomy (Ph.D.)

2021-22

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(Revised October 18, 2021)

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A. General

Additional information is contained in sections indicated in parentheses, e.g. (E).

1. These instructions and regulations combine material given in the Graduate School Catalogue, the Graduate School Policy Manual, and issued as departmental and graduate School memoranda, announcements, or instruction sheets. It is your responsibility to inform yourself of pertinent instructions and regulations, both of the Graduate School and of the astronomy program. Towards this end, these instructions and regulations are presented in a reference format.

2. Although the Astronomy Student Office will assist you in matters of registration and other required procedures, it is doing so as your agent. It is your responsibility to see that you are properly registered for the proper courses each semester.

3. Whereas these instructions and regulations should contain most of the information you will need while pursuing your graduate degrees, they do not include all details given in the catalogues, Graduate School Policy Manual, memoranda, announcements, and instructions from which they are extracted. Sections B, C and D constitute summaries of the MA and PhD degree programs. Sections F through U provide more complete information about specific aspects of these programs. In particular, section O provides valuable orientation to the main thrust of these programs.

4. The regulations are current as of August 2016 and subject to subsequent changes made by the Graduate School or the Graduate Studies Committee (GSC). Students entering before this date may elect to abide by regulations for the astronomy program in effect at the time they entered the program or by any subsequent set of astronomy program regulations, but they must declare which set they are choosing. If no declaration is made, they will be assumed to be using the most recent regulations. Written notice should be given to the Graduate Coordinator to be placed in your permanent file if you choose to use an earlier set of rules and policies.

5. Degree time limits imposed by the department are for full-time graduate students, who may have a half-time assistantship but carry a normal load of courses. For the occasional part-time student, appropriate deadlines will be set by the Graduate Studies Committee or by the student's supervisory committee. For students using the CNS academic accommodation policy for graduate student parents, appropriate extensions for academic responsibilities will be granted (E).

6. Under the Fourteen-Semester Rule on Student Employment, graduate students may only be employed as Graduate Research Assistant, Teaching Assistant, and other titles for a maximum of 14 long semesters. For more information, see

http:/www.utexas.edu/ogs/employment/14_semester_rule.html

Exceptions to the fourteenth semester rule are made only under very special circumstances.

7. Incoming students should study at least sections A-R and U, Y, and Z. Other sections should be studied at the appropriate times in the graduate student program.

8. Definition of terms used in this document:

Graduate Studies Committee (GSC): - The GSC members decide on departmental policy regarding the graduate program. This committee is made up of all assistant, associate, and full professors who are active participants in the Astronomy Graduate Program. Research Professors may be appointed as GSC members if the Dean of Graduate Studies approves the relevant petition, which includes a letter of support from the GSC Chair. Emeritus and Emeritus-elect Professors may continue GSC membership with approval of the Dean of Graduate Studies. Research Scientists co-supervising students attend GSC meetings but are not members of the GSC and do not have voting privileges.

Graduate Studies Executive Committee (GSEC): This committee consists of the GSC Chairperson, Graduate Advisor, Assistant Graduate Advisor, and usually one other GSC member. The Department Chair and Associate Chair are ex officio members. The GSEC decides whether to grant petitions from students, but may refer questions to the full GSC.

Graduate Advisor: The Graduate Advisor is the faculty member who officially represents the Graduate Dean. He or she monitors student progress and advises students. The Graduate Advisor petitions the Graduate School for any exemptions to university regulations. The signature of the Graduate Advisor is needed on many official forms.

Graduate Coordinator: This staff person assists the Graduate Advisor, maintains student records, can clarify rules and regulations set by the Graduate School, and is a general source of information relating to the program. Copies of all forms submitted to the Graduate School should be given to the Graduate Coordinator to be placed in your departmental file. Departmental forms described throughout this document as going to the Graduate Advisor are generally channeled through the Graduate Coordinator.

Undergraduate Studies Committee (UGSCOM): This committee consists of all faculty members.

99 Hour Rule: If you have earned more than 99 semester hours of credit at the doctoral level you will have to pay the nonresident tuition rate without regard to your residency

status or any work appointment that would normally entitle you to pay resident tuition. (N)

Doctoral Hours: Any coursework undertaken by you if you are seeking a doctoral degree after the completion of thirty semester hours of graduate credit. All hours undertaken once you meet this definition are considered doctoral hours EXCEPT undergraduate courses and Masters thesis courses (AST 698A,B).

Formula Funding: The State of Texas gives the University a set amount of money for each credit hour for which a student is enrolled on the 12th day of class. The amount varies for undergraduate, masters, and doctoral hours. The State cuts off formula funding to the University after a certain number of hours has been accumulated by a student in each category of hours.

Research Advisor, Research Committee, and Research Project: See section R for definition.

Dissertation Advisor, Dissertation Committee, and Dissertation Project: See section R for definition.

The term "Advisor" or "Supervisor" refers to either the Research Advisor or the Dissertation Advisor, as appropriate.

B. Representative Degree Program Time-Table

1. First Year

Take courses that count towards the nine required courses for the PhD degree (unless exempted); each of these courses must be passed with a grade of B- or better. (K)

Attend the Seminar for First-Year Astronomy Graduate Students if it is offered. (K,L)

Take additional courses and seminars to complete 9 semester hours of registration per long semester (Fall and Spring) and 3 semester hours during the summer if employed. (K)

Regularly attend one research seminar every semester. Give at least one oral presentation at a research seminar once a year. (L)

Choose an advisor for the second-year research project by March 1 in the Spring semester. (D, O)

Form a Research Committee as outlined in section R. Develop a written proposal (5 pages or less) describing the research to be carried out during the Research Project and

its importance. Have the proposal approved by the committee and submit it to the Graduate Advisor by May 7. Submit completed *Committee Agreement Form* to Graduate Coordinator. (D,O, R)

Begin research by the beginning of summer semester. (D, O)

Performance in courses, research and (if relevant) teaching assistant duties will be evaluated. (H)

Pass English Proficiency exam by beginning of second year (non-native English speakers). (X)

Follow the requirements for committee meetings outlined in section I.

2. Second Year

Have a one-on-one conversation with the Graduate Advisor during the first two weeks of the semester to make sure the student is comfortable with the chosen Research Advisor, and that the Research Project is progressing.

Take courses that count towards meeting the required course minimum (unless exempted); each of these courses must be passed with a grade of B- or better. (K)

Take additional courses and seminars to complete at least 9 semester hours of registration per semester (3 semester hours during summer if employed). (K)

Regularly attend one research seminar every semester. Give at least one oral presentation at a research seminar once a year. (L)

Follow the requirements for committee meetings outlined in section I.

Prepare a written Research Report for the second-year research project, have it approved by the Research Committee, then submit it to the Graduate Advisor no later than a week before the scheduled qualifying exam. Instead of the report, it is strongly preferred that students hand in a peer-reviewed paper that is in print, in press, submitted, or a substantial draft. (D, O)

Take your second-year qualifying exam by the end of May. It consists of three parts: a written report, a public oral presentation, and an oral exam. You will be assigned one of these grades: “Full Pass”, “Terminal Pass”, “Re-Examine” or “Fail”. The steps below assume you have passed the qualifying exam. (H, P, O).

If you pass your second-year qualifying exam with a grade of “Full Pass”, apply for PhD candidacy by August 15 of the second year by following the steps in section Q.

Submit a paper based on your second-year research project to a refereed journal for publication by August 15 of your second year. At least one paper per year is desirable for a career in research.

If you pass your second-year qualifying exam with a grade of "Terminal Pass" or "Full Pass" and decide to apply for the optional MA degree, please follow the guidelines in section C. In particular, we strongly recommend that you produce a Masters thesis primarily based on the refereed paper you submit for publication, rather than writing a Masters thesis from scratch (C).

3. Third and Subsequent Years (for students pursuing PhD degree)

Have a one-on-one conversation with the Graduate Advisor during the first two weeks of the semester to make sure the student is comfortable with the chosen PhD Advisor, and that the Dissertation Research Project is progressing.

Take dissertation classes (AST x99R, then x99W, where x may be 3, 6, or 9 depending on the situation). If x<9, the remaining hours will be seminar, organized courses and/or AST 391. (J, K, L, M)

Regularly attend one research seminar every semester. Give one oral presentation at a research seminar each year. Before applying for PhD graduation, present the equivalent of two 50-minute scientific talks as colloquia or seminars. (L)

Continue to submit papers for publication in peer-reviewed journals.

Follow the requirements for committee meetings outlined in section I.

The GSEC will review your progress and status if you have not completed your PhD by the end of three years from admission to PhD candidacy. (Q) Furthermore, tuition will increase dramatically after 99 doctoral hours. (The Graduate Coordinator can give you information on how many doctoral hours you have accumulated). (A, N)

4. Upon Completion of Dissertation Research

Submit to Dissertation Committee a complete draft of dissertation (V), having completed all nine required courses for the PhD degree (D, K)

Oral Examination: Defense of Dissertation. (T)

Upload final draft of dissertation, approved by the Dissertation Committee, to the Graduate School. (D, T)

C. Requirements and Application Process for the MA Degree

1. Students who pass their second-year qualifying exam with a grade of "Terminal Pass" or "Full Pass" are eligible to apply for the optional MA degree. (Q)

   Students with a "Full Pass" are also eligible to pursue admission to PhD candidacy. We strongly recommend that after passing the qualifying exam, students first focus on the following key steps:

   a) Apply for PhD candidacy by August 15 of the second year by following the steps in section Q. This includes setting up a Dissertation Committee and developing a Dissertation proposal. (D, Q)

   b) Submit a paper based on the second-year research project to a refereed journal for publication by August 15 of the second year.

   After completing (a) and (b), a student can apply for the optional MA degree by producing a Masters thesis primarily based on the submitted paper rather than writing a Masters thesis from scratch.

   In contrast, students with a "Terminal Pass" are not eligible to pursue admission to PhD Candidacy. They may find it beneficial to apply for the optional MA degree before they leave the graduate program.

2. If an eligible student wishes to obtain a Master's Degree, we recommend that it be completed within three calendar years of entry to the astronomy program, while bearing in mind the priorities outlined in (1). In case of a "Terminal Pass" on the second-year qualifying exam, the student should complete all requirements for the MA degree by the last class day of the following fall semester. In rare and exceptional cases, modification of this timeline may be granted if the GSEC considers and approves a petition from a student requesting an extension.

3. Students applying for the MA degree must satisfy the following requirements:

   a) Spend at least two semesters, or the equivalent, in residence as a full-time student and complete the major portion of the degree program at the University of Texas at Austin. (K)

   b) Satisfy the requirements in section K and complete the nine required courses for the MA degree with a grade of B- or better. (K)

   c) Must maintain a 3.0 (B) or better Grade Point Average for all on-campus graduate-level or upper-division courses taken while a graduate student, excluding thesis or report courses. Credit-noncredit (CR/NC) courses are not counted in determining the grade average. In addition, a 3.0 average (B or higher) or better must be maintained for

courses counted towards the degree; both in astronomy (excluding thesis) and in the minor. (K)

d) Regularly attend one research seminar every semester and give one oral presentation at a research seminar each year. (L)

e) Follow the requirements for committee meetings outlined in section I.

f) Meet the deadlines for the second-year Research Proposal in the first year (B, R)

g) Take the second-year qualifying exam by the end of May and pass it with a grade of "Terminal Pass" or "Full Pass."

h) Finish research leading to a Master's thesis (AST 698A and B). (O, P)

4. You may elect to turn your early research into a thesis project. In this case, you must register for AST 698 A and B (Thesis) to obtain an MA with thesis degree. You may take longer than 12 months to finish the thesis but deadlines for the qualifying exam are unchanged. If the thesis is not completed by the end of the second semester, additional AST 698B registrations are made until the thesis is completed. Make sure you are registered for the appropriate final semester thesis course!

Only one AST 698B registration may be counted towards the major area (AST 698B cannot be repeated for credit towards your degree requirements).

5 When applying for an MA degree, please note the following:

a) The Master's application affords the Graduate Dean the opportunity for detailed examination of your record, for maintaining Graduate School standards, and for enforcement of Graduate School regulations. A correct and proper application will prevent delays and additional effort.

b) The format for thesis submitted to the Graduate School for the MA degree is explained in instructions, which are obtained from your graduate coordinator or from the Graduate School webpage. You will need the approval of your committee to certify that the thesis is acceptable.

c) When your MA thesis is approved by your committee, you will submit it to the Graduate School, along with other supporting information.

D. Requirements and Application Process for the PhD Degree

The expectations for a PhD in Astronomy from the University of Texas at Austin (UT) are that you will fulfill the academic and course requirements of the program, and create a substantive body of work consisting of publications based on original research conducted while in the graduate program of the Department of Astronomy at UT. Students should work with their committees to craft a dissertation proposal which will satisfy the requirements. A typical substantive body of work would consist of at least 3 first-author scientific papers in relevant peer-reviewed journals, with most students having 3-5 such papers. We acknowledge that not all PhD theses are the same, thus exceptions and substitutions can be made if approved by the student's Dissertation Committee and the Graduate Studies Executive Committee (GSEC). Examples of qualifying alternate contributions that, with the required approvals, may replace a subset of the first-author scientific papers include first-author papers on instrumentation in venues such as SPIE Proceedings and on research tools or analysis techniques including those associated with releases of scientific software.

Students working toward the PhD degree are expected to satisfy the requirements below:

1 Students must spend at least two semesters, or the equivalent, in residence as a full-time student and complete the major portion of the degree program at the University of Texas at Austin. (K)

2 Students must follow the requirements in section K and complete the nine required courses for the PhD degree with a grade of B- or better. If a course is not passed with a grade of B- or better, it will not count toward the requirement of nine courses. (K)

3. Students must maintain a Grade Point Average (GPA) of 3.0 or better for all on-campus graduate- level or upper-division courses taken as a graduate student excluding dissertation and thesis courses. Credit-noncredit (CR/NC) courses are not counted in determining a grade average. (K)

4. Students must meet the deadlines for their second-year Research Proposal:
Form a Research Committee (see section R), develop a written Research Proposal (5 pages or less) describing the research to be carried out and its importance, have the proposal approved by the committee, and submit it to the Graduate Advisor by May 7th of the first year. Failure to meet this deadline will be considered a lack of progress, likely subjecting the student to dismissal from the program (Z). The proposal should describe the importance and methodology of the project and give a timeline of expected progress milestones .(R)

5. Students must follow the requirements for committee meetings outlined in section I.

6. Students must write the Research Report for their second-year research project, have it approved by the Research Committee then submit it to the Graduate Advisor no later than a week before the scheduled qualifying exam. Instead of the report, it is strongly preferred that students can submit a peer-reviewed paper that is in print, in press, submitted, or a substantial draft. (P)

7. Student must take their second-year qualifying exam by the end of May in their second year. The exam consists of three parts: a written report, a public oral presentation, and an oral exam. One of the following grades is assigned: "Full Pass", "Terminal Pass", "Re-Examine" or "Fail". (P, O)

8. Students who pass their second-year qualifying exam with a grade of "Full Pass" are eligible to pursue admission to PhD candidacy and should do so by August 15 of the second year by following the steps in section Q. (Q)

9. Upon becoming a candidate for the PhD degree, student must register for the dissertation course (AST 399R, W, 699R, W, or 999R, W, with R being the first registration and W all subsequent registrations). (Q)

10. In the ensuing years leading to their final oral examination (defense of dissertation) students are expected to make significant progress on their Dissertation Project and to have regular committee meetings as outlined in section I.

11. Students must regularly attend one research seminar every semester and give one oral presentation at a research seminar each year. Before applying for PhD graduation, they must present the equivalent of two 50-minute scientific talks as colloquia or seminars. (L)

12. Students must provide their Dissertation Committee a <u>complete</u> draft of the dissertation <u>no less than two weeks</u> before the signatures of committee members are requested on the form scheduling the final oral examination (defense of dissertation). The final complete draft must be submitted to each committee member <u>no less than four weeks</u> prior to the date on which students intend to defend the dissertation. (T)

13. Student must pass the final oral examination (defense of dissertation) in order to be eligible for the PhD degree (T)

14. After passing the final oral examination, student must upload to the Graduate School a final draft of the dissertation incorporating any revisions required by the committee and bearing the approval signatures of committee members. (T)

15. The Graduate Dean suggests that all PhD students obtain their degree within three calendar years of becoming a candidate. Additional time will be allowed only if the Graduate Studies Committee recommends with justification such an extension. This process may be repeated annually, but each time the committee must address the questions of possible termination of candidacy or conditions for continuation. (T)

16. All graduate students must pay out-of-state tuition rates after they have accumulated 99 doctoral hours (see definition of 99 hour rule and doctoral hours in section A). You can check with the Graduate Coordinator to track the number of doctoral hours you have accumulated. (A, L)

E. Flexibility in a Graduate Student's Program

1. You may petition for an exception to or modification of any departmental regulation. In particular, you may petition to replace an organized course with a course taken at another institution or in another department. You may also petition to take a class by examination. The petition is presented to the Graduate Advisor for consideration and decision by the GSEC. You should discuss the matter first with the Graduate Advisor. A similar procedure exists for petitions to the Graduate Dean concerning Graduate School regulations (which are routed through the Graduate Advisor).

2. In exceptional cases, you may wish to pursue an interdisciplinary PhD program. This must be approved by the Graduate Dean, and will be supervised and administered by an interdisciplinary faculty committee appointed by the Dean. Until such a committee is appointed, you will be advised by the Graduate Advisor.

3. The Graduate Dean will approve an interdisciplinary PhD program only if strong and compelling reasons are presented for such a program, as distinct from a program in an established graduate studies area. The Graduate Advisor will assist you if you wish to pursue such a program with the mechanics of obtaining the Dean's approval. Guidelines and an application for such programs may be obtained from the Graduate School.

4. The College of Natural Sciences has the following academic accommodation policy for graduate student parents: "In the cases of childbirth or adoption, graduate students in the College of Natural Sciences are allowed a one-semester extension in the completion of academic responsibilities required for their degree. Academic responsibilities include coursework, qualifying exams, committee meetings, presentations, or any other required academic milestones. These responsibilities may be postponed either during or immediately following the semester in which the student's child is born or adopted. "

   The GSC chair acts as the Astronomy department's contact for graduate parental academic accommodation policy. Graduate students should inform their supervising professor, departmental contact, and graduate advisor of their need for the academic accommodation at least one month prior to the start of the semester during which the accommodation is needed.

5. Students who have earned a “Full Pass” in the second-year qualifying exam may wish to pursue the subsequent PhD research in a department other than Astronomy (but see point 3. above for the option of an interdisciplinary PhD program). In exceptional circumstances, a student can petition the GSEC to consider such an arrangement with

an external department. If approved, the GSEC will decide on the specific boundary conditions in accordance with the policies of both departments involved, and with those of the Graduate School.

F. Teaching Opportunities

1. You may be appointed as a Teaching Assistant (TA) or an Assistant Instructor (AI). The primary functional difference between a TA and an AI is that, with GSC and UGSCOM approval, AIs may conduct regular classroom instruction. Appointment to the AI job title does not guarantee that you will be assigned to teach a class. Two other steps are required: a) On behalf of the GSC, the Graduate Advisor must certify that you are formally qualified for AI status; b) the UGSCOM must determine that you are qualified to teach and then select you to teach a particular class. Class size for courses taught be AIs shall be limited to 50 students in the absence of special permission by UGSCOM.

   T.A. Workloads for Undergraduate Astronomy Courses: (approved by the College of Natural Sciences)

   - Attend class meetings as needed, up to 3 hours per week.
   - Approximately 4 outside-of-class student contact hours per week, including help sessions and office hours.
   - Approximately 2 hours of course management tasks, including managing the class website and gradebook on Canvas, sending announcements, and answering student email queries.
   - Approximately 4 hours of grading student work, including essays, papers, in- class activities, group projects, quizzes, and exams; duplicating materials; and interacting with the Scanning Center and SSD office.
   - Adjustments may be made to the above amounts and distributions of effort depending on considerations such as course design, class size, laboratory components, and requirements for courses with flags (QR, writing, etc.).
   - Total hours up to 20 per week, but actual time spent in a particular week may vary depending on that week's assignment load for the undergraduates enrolled in the course.

2. TA for Signature Courses: Being a TA for a signature course provides a valuable teaching experience and is useful in developing credentials for faculty positions at institutions where teaching experience is necessary. In addition to class time, office hours and grading, the TA duties for the signature courses also include attending mandatory training sessions required by the College, holding one or several discussion sections each week, developing class exercises for the discussion sections, and sometimes grading essays to fulfill the writing component flag.

Only students who meet the eligibility requirements set by the College and of the instructor teaching the course may be assigned as a signature TA. The requirements may involve past teaching experience and English skills required to lead discussion sections and grade essays.

Given that the TA workload for many signature courses is significantly higher than that of non-signature courses, students may request not to be assigned to signature courses in two successive semesters. Attempts will be made to accommodate these requests, but this may not always be possible, given the multiple constraints involved in TA assignments.

3. Eligibility Criteria to Become a Teaching AI:

a) Obtain the certification of the Graduate Advisor that you:

- Satisfy the formal University criteria to be an AI:
  1) Have a Master's Degree or equivalent
  2) Have credit for 398T
  3) Have one semester as a TA or have one year of teaching experience at an accredited institution
- Have the support of your academic advisor to become a teaching AI
- Be in "good standing" in the sense of meeting deadlines for committee meetings and progress through the astronomy program.

b) Obtain the certification of UGSCOM that you have appropriate teaching credentials. Among the prerequisites to teach are:

- Excellent 398T and TA evaluations
- Excellent spoken and written English
- Broad TA experience (i.e. have worked for more than just one instructor; duties broader than only having graded papers/exams)
- Strong general record of performance at UT (academic coursework and research progress)
- Good knowledge of astronomy

3. Application process to become a Teaching AI:

a) *Send a formal request to the Graduate Advisor by submitting the AI application (available from the Student Office) and a brief statement of purpose*. The statement of purpose should include a course description and preliminary syllabus as well as the name of a faculty supervisor and a supervision plan. This statement should be submitted at the beginning of the long semester that precedes the semester in which you want to be a teaching AI (beginning of fall for the spring semester, beginning of spring for the fall semester).

b) The Graduate Advisor (consulting if necessary with other members of the GSC) will approve those requests that seem appropriate as part of the student's graduate school endeavors and pass these on to the UGSCOM.

c) The UGSCOM Executive Committee will evaluate the qualifications of the candidate using the criteria presented in Section 2 and other appropriate standards and will decide how many and which AIs to recommend to teach classes on the basis of departmental and undergraduate student needs each semester.

d) These recommendations will be given to the Department Chair who will make the final decision.

G. Advising and Supervising a Graduate Student

1. Until you become a candidate for the PhD degree, you are advised by your Research Advisor, Research Committee (R), and the Graduate Advisor. In particular:

   a) The Advisor can provide advice on the choice of courses to take. If you do not have an Advisor (typically students in their first semester), the Graduate Advisor can provide advice.

   b) All aspects of the MA thesis (AST 698A, B) are under the supervision of your Research Committee, chaired by your Research Advisor. The application for MA degree candidacy, however, will be carried out with the assistance of the Graduate Coordinator. (C)

2. A PhD candidate's program is under the supervision of the Dissertation Committee, chaired by the Dissertation Advisor, with oversight by the Graduate Advisor and the GSEC. (R, D)

H. Graduate Student Evaluation

1. To remain in the Graduate School and continue for a PhD, you must maintain at least a 3.0 Grade Point Average for all on-campus graduate-level or upper-division courses taken as a graduate student, excluding dissertation, thesis or report courses. Credit-noncredit (CR/NC) courses are not counted in determining a grade average. If you fail to maintain a 3.0 Grade Point Average during any semester, the Graduate Dean will warn you that your status in the Graduate School is in jeopardy and you will not be eligible for academic employment the following semester (i.e., you will lose financial support for a full semester). Failure to achieve an overall average of 3.0 by the following semester or session (with the restriction that you are not allowed to drop a course or to withdraw from the University during that semester or session) will lead to dismissal by the Graduate Dean. A reprieve may be granted if the Graduate Studies Committee recommends continuation. (K)

2. You will be evaluated during committee meetings. Follow the guidelines in section I to schedule committee meetings at the required frequency and provide your committee well ahead of the committee meeting with all relevant material. (I)

3. In the first two years, your level of performance in research, coursework, and other activities is reviewed by your Research Committee and the GSEC. The evaluation of first-year students is comprehensive (course work, assistantship, etc.); the evaluation of second-year students normally concentrates on the research to date and is directed towards determining potential for independent research. Second-year students whose first-year performance was considered marginal are evaluated comprehensively.

4. You must pass the second-year qualifying exam with a grade of "Full Pass" in order to pursue admission to PhD candidacy. The exam evaluates your performance on your second-year research project and coursework. (D, P, Q)

5. Once students are admitted to PhD candidacy, their progress in research will be monitored through regular committee meetings by the Dissertation Committee, which will report assessment of progress to the Graduate Advisor, through submitting committee reports to the Graduate Coordinator. (I, R T)

I. Committee Meetings and Evaluation Forms

Committee meetings enable Research/Dissertation Committees to assess the progress of students and provide them with feedback and guidance. The Committee Meeting Evaluation Form serves several important purposes. It is used to assess the standing of all students in the graduate program and their eligibility for awards and prizes. It is used to identify and help students facing difficulties in a timely manner. Finally, it is used as a metric for assessing our graduate program as mandated by the University's Office of Institutional Accreditation and Program Assessment.

1. In order to remain in good standing, students must schedule their committee meetings at the requisite frequency and help ensure that their Committee Meeting Evaluation Forms are returned to the Graduate Coordinator in a timely way, as described below.

2. We require committee meetings to be scheduled at a frequency that depends on the student's stage in the graduate program:

   a) First-Year Students are required to form a Research Committee and submit a written proposal for their first research project to the Graduate Advisor by May 7 of their first year. A committee meeting is not mandatory in the first year, but it may be helpful in establishing the plans for the project.

   b) Students in their Second Year and Beyond must have a committee meeting **in the Fall semester** of each year. It is important to schedule this mandatory meeting in the Fall

(rather than in the Spring) semester so that the Research/Dissertation committee can give students early feedback and can exercise the option to request a second committee meeting in the Spring, if needed.

The second committee meeting in the Spring is not mandatory and it is scheduled only if it is requested by the student or by one or more members of the Research/Dissertation Committee. The purpose of this second optional Spring committee meeting is to provide additional guidance for students who are facing challenges. It may also be particularly useful for some second-year students who will be taking their second-year qualifying exam in the Spring and need additional feedback from their Research Committee before the exam.

3. At least one week before their committee meeting, students must do the following:

   a) Fill in the first part of the progress report form to indicate their presentations, publications, research goals and timeline and send the form to their Research/Dissertation Committee.

   b) Send to the Research/Dissertation Committee a short (less than 4 pages) report (approved by their Advisor) summarizing their progress. Drafts of papers in preparation may also be sent, if relevant.

4. During the last part of the committee meeting (e.g., 20 min), the committee members should jointly fill in the second part of the progress report form to assess the student's progress and outline future expectations. The Research/Dissertation Advisor should separately meet with the student and discuss the completed report, which both should sign. The student should then email the progress report form back to the Graduate Coordinator no later than one week after the meeting.

5. If the Graduate Coordinator has not received the report within a week after the committee meeting, he/she will request that the student works with the Research/Dissertation Advisor and Graduate Advisor to ensure a prompt resolution.

6. A copy of the Committee Meeting Evaluation Form should be sent to the outside committee member, when relevant. (R)

7. If a committee decides progress is unsatisfactory in a regular Fall meeting, a follow-up committee meeting in the subsequent spring semester is mandatory. The advisor and committee will offer to work with the student to develop a plan to reach the target benchmarks and help the student access any resources deemed necessary. If the overall progress has not improved by the next committee meeting (e.g., in the spring), the student has a final opportunity to make satisfactory progress next fall. If the student has still not met appropriate progress benchmarks the GSEC will consider termination of the student’s tenure in the program, in close communication with the student’s PhD supervisor and committee.

J. General Explanation of Course Terms

There are three general kinds of courses referred to herein: organized courses, seminar courses, and individual instruction courses.

1. Organized courses meet in a classroom, cover specific subject matter, have regular assignments, and generally consist of lectures or other class activities. (K)

2. Seminars meet weekly, need not have regular assignments, and often consist of lectures by faculty, research scientists, visiting experts, and students. (L)

3. Individual Instruction courses have no regular meeting times. These include supervision during the MA (AST 698A/B) and PhD (x99R/W) period. The teacher of these courses will explain the time and manner of interaction. (M)

K. Required Courses for the MA or PhD degree

1. Astronomy graduate courses taught by the department are listed under categories A through D. Courses in categories A through C are typically offered at least once every two years and may be taught by different faculty in different years. Courses in category D are more specialized and are typically offered at intervals longer than two years.

   Students working toward the MA or PhD degree are required to take nine courses for a grade. In this document, we refer to these courses as the "nine required courses for the MA or PhD degree."

   a) Of these nine required courses, seven must be drawn from categories A to C.

   b) The remaining two required courses can be drawn from categories A to D, or may consist of elective graduate courses in Astronomy or related areas (e.g., Physics, Computer Science, Computational Engineering and Sciences, Statistics and Data Science, Aerospace Engineering, or Geosciences), with the stipulation that courses outside of the Astronomy department require approval by the Graduate Advisor and your Advisor.

   c) Students are encouraged to work with their Research Advisor to determine which courses will best fit their research interests.

   A. Fundamental Astrophysics
   AST 380E/Radiative Processes
   AST 381C/Gravitational Dynamics
   AST 382C/Gas Dynamics

B. Astronomy Main Subfields
AST 386C/Galaxies
AST 393F/ISM
AST 396C/Cosmology
AST 383D/Stellar Structure
AST 351/392J Instrumentation
AST 381/Planetary astrophysics

C. Applied Methods
AST 383/Data Analysis
AST 381/Computational Astrophysics

D. Specialized Topics
AST 383C/Stellar Atmospheres
AST 383/Nucleosynthesis
AST 383/Asteroseismology
AST 386/Galaxy Evolution at High Redshift
AST 392D/Mathematical Methods for Astronomy
AST 381/ Physics of Compact Objects
AST 381/High Energy Astrophysics
AST 381/Formation of Galaxies

2. You must pass each of the nine required courses for the MA or PhD degree with a grade of B- or better to become a PhD candidate. You may petition to replace a required course with a course taken at another institution or in another department, or to take a course by examination. See E.1 for more information.

3. Supervised Teaching in Astronomy (AST 398T) may not be included among the nine required courses for the MA or PhD degree. However, AST 398T is required before you may apply for an Assistant Instructor position and is highly recommended if you are planning a career that includes teaching. Since it is offered infrequently within the Astronomy department, you may take 398T for credit in another department.

4. During their first year, students are required to attend the Seminar for First-Year Astronomy Graduate Students if the seminar is offered. (L)

5. Courses taken in other departments on a CR/NC basis can be counted as elective courses, but do not count toward the nine required courses for the MA or PhD degree.

6. As preparation for your initial registration, you should examine your background in physics and in astronomy in some detail to determine the degree of preparation for the required courses. If such background seems to be deficient, you are advised to remove such deficiencies by self-study or by taking undergraduate courses.

7. AST 391 is an organized course that covers individual Research Projects or assistantships but involves regular meetings with a GSC member who may or may not be your Advisor.

Such courses are credit-noncredit (CR/NC) and are not counted in computing grade averages. AST 391 does not count towards the nine required courses for the MA or PhD degree.

8. If you wish to take courses outside of the department that are unrelated to your degree, you may do so with the permission of your Advisor and the Graduate Advisor.

L. Seminar Courses and Oral Presentations

1. Seminar for First-Year Astronomy Graduate Students: During their first year, students are required to attend the Seminar for First-Year Astronomy Graduate Students if the seminar is offered. This seminar provides a useful introduction to astronomy practices and ongoing research in the department, but is not taken for credit or a grade.

2. Research Seminars: The Department and McDonald Observatory have formed five research groups in the following areas: Extragalactic Astronomy, Interstellar Medium, Planetary Systems, Stars, and Theory. Each long semester, these groups offer the following weekly research seminars: Extragalactic Astronomy, Planets/Life/ISM, Stellar Astronomy, and Theoretical Astrophysics. Typically, in a given long semester, only a subset of these seminars are offered for course credit (CR/NC), while the others are held informally without credit.

   The Cosmos seminar features interdisciplinary talks that span research areas covered by several research groups, and is typically not offered for credit.

3. Students are required to give an oral presentation at a research seminar once a year.

4. Students are required to regularly attend a research seminar each semester. During the semester where the seminar is offered for course credit, students are required to register for the seminar except in the following cases:

   a) Students who already have 9 registration hours due to their enrollment in organized courses approved by the Graduate Advisor are not required by the department to register for a seminar. If they choose to register for a seminar, the Department will not cover the extra tuition costs for the seminar.

   b) Students may forego registration if they receive prior approval from the Graduate Advisor.

5. Before applying for PhD graduation, students must present the equivalent of two 50-minute scientific talks as colloquia or seminars. (D)

6. Students who take a research seminar for course credit will receive course credit if they meet the course requirements set by the instructor and attend the seminar regularly, except for absences cleared in advance by the instructor. Valid reasons for absences include research-related travel such as conferences and observing runs, as

well as arrangements for the student to attend another seminar more closely related to his/her research interests.

7. Research seminars taken for course credit (CR/NC) are not counted in computing grade point averages.

M. Individual Instruction Courses

1. These courses include dissertation (AST 399R, W, 699R, W, or 999R, W, with R being the first registration and W all subsequent registrations), thesis (AST 698 A and B, with A being the first registration and B all subsequent registrations, and conference course (AST 385). Individual Instruction Courses are CR/NC courses. AST 385 is a CR/NC course unless the student has made arrangements for a special project on a letter grade basis. AST 391 is generally taken once you have obtained an MA but have not yet been admitted to PhD candidacy. Except when AST 385 is taken for a letter grade, these courses are not counted in computing grade averages, and when more than one registration is involved, the grade "in progress" is recorded until the last registration, when a letter grade is given for the last 398R, the 698A and the last 698B, the -99R and the last -99W.

N. Registration

1. Detailed instructions for registration are given in the course schedule. The Graduate Coordinator will assist you with registration. A few of the general features of these procedures are worth noting.

2. Full-time students in residence and classified as paying state resident tuition must register for 9 semester hours for the fall and spring semesters of the first two years. You must register for 9 semester hours thereafter and for three or six semester hours for the summer session. Full-time students in residence and classified as paying state nonresident tuition or part-time students in or not in residence may, with the Graduate Advisor's permission, register for fewer semester hours, but not less than three. Students registered for less than 9 hours are considered part-time and may not work for the department as a Teaching or Graduate Research Assistant. Students working twenty or more hours a week for the university (assistantships) are classified as residents until they have accumulated 99 doctoral hours. After 99 doctoral hours, students are subject to non-resident classification for tuition purposes, even if employed by the department. (A) The other, complex, legal criteria for a resident status and procedures for changing a nonresident status to resident are discussed in Appendix A of the University Catalogue: General Information.

3. The Graduate School requires that MA or PhD candidates register each semester until they have obtained their degree. In particular, you must be registered the semester or session in which you receive your degree. (C, D)

4. Graduate-level courses (other than individual instruction) with enrollments less than five require special permission. Since last-minute cancellation of a course involves great inconvenience to students and faculty, you must pre-register, which involves selecting your courses. Consult the Graduate Coordinator for details about pre-registration and registration.

5. The Advisor can provide advice about selection of courses to take. If the student does not have an advisor (typically students in their first semester), the Graduate Advisor can provide advice. (G, K)

6. General guidelines for scheduling course registration in a student's program are
   a) Removal of deficiencies - first year; (K)
   b) Required courses - first two years or as soon as possible; (K)
   c) Required conference course - first year; (L)
   d) Seminar courses (L)

7. Astronomy graduate-course descriptions listed in the Graduate School Catalogue or in the course schedule are brief and, in some cases, out of date. More complete course descriptions are kept by the Graduate Coordinator.

O. Starting Research

1. Research is an essential part of the graduate education. You should begin research as soon as possible, consistent with your course work. Work on a Research Project should begin no later than the spring of the first year. It is often desirable to begin sooner, perhaps in the first semester, but the research must be balanced against the need to achieve excellence in course work.

2. Research is normally accomplished under the supervision of a member of the GSC as defined in section A. In some cases, research scientists also supervise research, but the official Advisor must be a member of the GSC, with the Research Scientist serving as co-advisor.

   The choice of Advisor for these projects is of paramount importance to your career. You will need strong letters of recommendation from the advisor to obtain employment. It is common for advisors to be asked for letters of recommendation many times through the course of an ex-student's career. In addition to the field of research of the advisor, you should consider factors that may affect your ability to work with the advisor in a productive way. (R)

3. The choice of research is coupled to, but not identical to, the issue of support. Some advisors will be able to support their students with research assistantships. In other cases, you will have to be a teaching assistant or a research assistant for someone other than your advisor. The latter case provides an opportunity to broaden the student's research background and potential employment options, but it may also be more demanding of time. Such arrangements should be discussed with your research advisor. (U)

4. During the first year, you will make a choice of a field of research and begin research. In early Spring of your first year, you must choose a Research Advisor, form a Research Committee and develop a written proposal (5 pages or less) of research to be carried out during the Research Project. This proposal must be approved by your Research Committee and submitted to the Graduate Advisor by May 7 of the first year. (D, R)

5. Research during the first two years is supervised by the Research Committee (R). Your progress on research will be evaluated during committee meetings. Follow section H to schedule committee meetings at the required frequency (H)

6. Take your second-year qualifying exam by the end of May. The outcome of this exam will determine whether you are allowed to pursue admission to PhD candidacy and whether you will be eligible for an optional Masters degree. The outcome of the exam will be based on three parts: a written report, a public oral presentation, and an oral exam. You will be assigned one of these grades: "Full Pass", "Terminal Pass", "Re-Examine" or "Fail". (P)

7. If you pass your second-year qualifying exam with a Full Pass, you are eligible to pursue admission to PhD candidacy. You should apply for PhD candidacy by August 15 of the second year by following the steps in section Q. The first step in this process involves the selection of a Dissertation Advisor and Dissertation Committee, as outlined in section R.

8. The PhD dissertation is explicitly recognized to be the sum total of research done by you at UT. Given the need for published papers in the job market, *the dissertation should be organized as a series of papers that are published at a rate of about one/year and then bundled into the dissertation format.* This fact has been recognized by the Graduate School, which has the following rules for papers with multiple authors: "Dissertations consisting of multiple-authored papers or articles must include a detailed description of the contribution of the dissertator to each. Supervising committee members will sign the signature page only when they are satisfied that the contribution of the dissertator to the multiple-authored papers or articles is sufficient to represent a dissertation." Much of the time spent turning the traditional dissertation into papers, which often occurs after the student graduates, can be eliminated if this approach is taken seriously by all students and advisors. We recognize that there will be variability in the degree to which Research Projects can be modularized into several paper-length portions, but we still recommend that all advisors and committees devote effort to organizing the

research so that such a goal can be met. In general, we recommend that a dissertation comprise at least 3 published or publishable papers. (D, R, S, T)

9. Observational research usually requires that the student obtain telescope time. Learning how to write successful observing proposals is an important part of an observational astronomer's education. Students in our program obtain their observations on a wide variety of telescopes, including space-based and airborne telescopes and national and international telescopes. Many students obtain time at telescopes that guarantee time to members of the University of Texas department, with the understanding that access to these facilities still requires formal application and acceptance by a telescope allocation committee. These facilities include the optical telescopes at Mt. Locke, Texas. Proposals for time on these telescopes are usually developed in concert with the Advisor, but students may apply for time on their own. Information about observing at Mt. Locke can be obtained from the McDonald Observatory staff.

10. The Department and McDonald Observatory have formed five research groups, with the following areas of interest: Extragalactic Astronomy, Interstellar Medium, Planetary Systems, Stars, and Theory (www.as.utexas.edu/astronomy/research). Each student should affiliate with whichever of these groups most closely matches his or her research interests. The research groups hold weekly seminars or combined seminars (L) that the student is expected to attend, and manage a small amount of funds. These funds often support research or travel needs of students. There are very small amounts of money for travel available through the graduate school; the graduate advisor should be contacted about the latter. Also, the Graduate Advisor may be able to provide funds out of the Cox Graduate Excellence Funds if these are available (U).

P. Second-year Qualifying Exam

1. The second-year qualifying exam is the qualifying exam for admission to candidacy for the PhD (Q). It is required of all students and must be taken before the end of the Spring semester of their second year. It consists of three parts: a written report, a public oral presentation, and a closed oral exam. Satisfying these requirements will normally lead to an MA degree (C). Performance in research, including obtaining the background knowledge necessary for the research, is an important part of your evaluation.

2. You should set up your examining committee at least a month before their second-year qualifying exam. The examining committee will consist of the members of your Research Committee plus one ex-officio member. The ex-officio members ensures uniform standards and must be a member of the Graduate Studies Executive Committee (GSEC), including the ex officio members of that committee (Department Chair and Associate Chair). If one member of your Research Committee is a GSEC member and this person is not your advisor, this individual can serve in both capacities.

3. You must prepare a written report of the research carried out during the Research Project and submit it to the Research Committee no later than 2 weeks before the scheduled qualifying exam. The Research Committee may request changes, but the process must lead to a report acceptable to the Research Committee by one week before the qualifying exam. The report may be a peer-reviewed paper that is in print, in press, submitted, or a substantial draft. This latter option is strongly favored.

4. No later than one week before the scheduled qualifying exam, you must submit the research report, information on three classes, including questions supplied by the instructor, and a filled-in *2nd Year Presentation/Exam Registration Form to* the Examining Committee and the Graduate Coordinator. The form has the following information about the exam: (i) Three graduate courses for the general knowledge part of the exam, taken from the list of courses in section K. When possible, one of the three courses should be in your research area. (ii) A research-area pyramid of three research areas for the research-related part of the exam. For this part, you and your Research Advisor will have identified three areas of increasing breadth in which you will be expected to be knowledgeable. The research-area pyramid should include a research area closely tied to your research project, more general research subfields, and the "big picture" basic knowledge of the field. In cases where the relevant background knowledge does not lend itself to such a "nested" structure, for example drawing on parallel or overlapping areas (e.g., instrumentation or computational plus observational expertise), the Research Advisor and student will determine the research areas that are most appropriate. The Graduate Advisor can provide advice on this topic.

5. If you have obtained an MA in Astronomy at another institution, you may petition (E) to substitute your MA thesis for the research leading up to the Qualifying Exam. If the MA from the other institution is approved as a substitute, you will still have to make a public presentation and pass the oral qualifying exam.

6. After the public presentation of the research project, you will have a closed oral exam administered by the Examining Committee, in accordance with the rules below.

   a) During the oral exam, you will be expected to demonstrate knowledge outside the narrow confines of the specific research project that you have undertaken. The examining committee will consider the written report on research, your understanding of course work (as reflected in your grades and in your performance on the general knowledge part of the oral exam), and on your understanding of your research and its context, as measured by your answers to research-related questions.

   b) The Presiding Examiner, a member of the GSEC who is not the Research Advisor, will preside over the second-year qualifying exam in order to ensure a uniformity of standards. The Research Advisor cannot help students answer questions, and should remain silent until called upon by the presiding examiner. (H, R).

c) The oral exam begins with a **general knowledge** test. For this part, the committee will primarily ask questions on the three graduate courses that you listed on the *2nd Year Presentation/Exam Registration Form* (see point 4) and you will be expected to be thoroughly knowledgeable. In the special case that the Research Advisor has taught one or more of the courses in the year the student took them, the Presiding Examiner will consider calling on the Research Advisor to ask questions on one of these courses.

d) The general knowledge section is followed by the research-related section of the exam. For this part, the committee will examine your knowledge on the three research areas in the research pyramid that you submitted (see point 4). The committee need not be constrained to asking questions only in these areas, but can expect a higher level of understanding in these areas. If time permits, the Presiding Examiner may ask the Research Advisor to ask a question on the research.

In deciding the outcome of the exam, the committee will consider the following: the written report, the public performance, the closed oral exam, and the record of your graduate coursework.

The result of the examination will be one of the four recommendations listed below.

a) Full Pass: The student passes, is deemed eligible for the optional Masters Degree, and is allowed to pursue admission to PhD candidacy. (Q)

b) Terminal Pass: The student passes, is deemed eligible for a terminal optional Masters Degree, but cannot pursue admission to PhD candidacy. (C)

c) Re-Examination: Re-examine at a time to be arranged by the examining committee, but not later than end of September in the subsequent fall semester. The “re-take” option can at most be chosen once.

d) Fail: Student fails, is not eligible for a Masters Degree and cannot pursue admission to PhD candidacy.

All committee members, including the Research Advisor, must be present to discuss the evaluation of the student before filling out the Second Year Qualifying Exam Form. If all members are not present for the final evaluation, the committee must reconvene. Either physical or electronic presence (e.g., via videoconference) is acceptable. (H, R)

7. The Presiding Examiner (a member of the GSEC) will collect the input of the examining committee. Generally, a consensus is reached and the Presiding Examiner informs the student of the outcome immediately. If a consensus does not exist, a vote will be taken, with all members of the committee able to vote. In the case of serious disagreement (more than 1 dissenter), the Presiding Examiner will report the results to the Graduate Advisor, who will convene the GSEC for a final recommendation. The Graduate Advisor will then convey the final result to you. In any case, the Presiding Examiner collects the

forms evaluating the performance and provides them to the Graduate Coordinator. Your Research Advisor will discuss your performance with you and the Presiding Examiner may also do so.

8. If you have passed the qualifying exam, you should choose a Dissertation Advisor (R), write a Dissertation Proposal (S), form a Dissertation Committee (R), and apply for candidacy on-line. Your application will be approved by the Graduate Advisor only if the outcome of the steps in the last subsection resulted in permission to proceed to candidacy.

9. In exceptional circumstances, students can petition the GSEC for a delay in taking the exam (which may be a re-take exam). Such a petition will be approved only for compelling reasons supported by appropriate documentation. If such a petition is granted, the latest any second-year qualifying exam can be taken is by the end of May in the third year in the program.

Q. Application for PhD Candidacy

1. Candidacy application affords the Graduate Dean the opportunity for detailed examination of a student's record, for maintaining Graduate School standards, and for enforcement of Graduate School regulations. A correct and proper application will prevent delays and additional effort. The following suggestions may be helpful.

2. Students who have earned a “Full Pass” in the second-year qualifying exam are expected to advance to Ph.D. candidacy by the last class day of the long semester following the exam (Fall of the third year). All steps of the Ph.D. candidacy application process should be completed by that date, including the online submission of the Graduate School Degree Candidacy Application Form. A student may petition the GSEC to consider an extension, which may be granted under exceptional circumstances. Application for PhD candidacy involves the following steps:

   a) First, students must select a Dissertation Advisor and form a Dissertation Committee. This selection process is described in detail in section R.

   b) Next, students must develop a Dissertation Proposal (five pages or less) of research to be carried out for the PhD degree and have the Dissertation Committee members approve the proposal and sign the PhD Candidacy Sign-Off Sheet.

   c) Finally, students must submit the *PhD Candidacy Sign-Off Sheet* to the Graduate Coordinator, who will then guide them through the Graduate School’s candidacy application process.

3. Students whose native language is not English must submit evidence to the Graduate Advisor that they have passed their University English Certification. (X)

4. When the notification of PhD candidacy is received from the Graduate School, students must register for the dissertation course AST 399R, 699R or 999R. All subsequent registrations for the dissertation course will be for AST 399W, 699W or 999W. (D, N)

5. Initially candidacy is valid for three years. Thereafter, upon recommendation by the GSC, and upon approval by the Graduate Dean, candidacy may be extended on a year-to-year basis. It should be emphasized that extensions are not automatically granted. Each case is individually discussed by the GSEC before an extension is recommended or disallowed.

R. Research and Dissertation Committees

1. The terms Research Advisor/Committee/Project are defined as follow:

   Your Research Advisor supervises your research until you pass the second-year qualifying exam.

   Your Research Committee, which includes your Research Advisor, checks your progress on research until you pass the second-year qualifying exam (P). It holds committee meetings at the frequency specified in section I.

   The term Research Project describes the research you do up to the point of the second-year qualifying exam.

2. The terms Dissertation Advisor/Committee/Project are defined as follows:

   Your Dissertation Advisor (or Supervisor) supervises your research after you pass the second-year qualifying exam.

   Your Dissertation Committee, along with your Dissertation Advisor, works with you after you pass the second-year qualifying exam and as you start applying for PhD candidacy (Q). It is responsible for approving your PhD Dissertation Proposal and signing the *PhD Candidacy Sign-Off Sheet* (Q). It also checks your progress on research after you are admitted to PhD candidacy and holds committee meetings at the frequency specified in section I.

   The PhD Dissertation Project is the sum total of research done by you at UT (both before and after you pass the second-year qualifying exam), but it lays greater emphasis on research done after you pass the second-year qualifying exam (S,T).

   The term “Advisor” or “Supervisor” refers to either the Research Advisor or the Dissertation Advisor, whichever is relevant.

3. You must choose a Research Advisor and inform the Graduate Advisor of your selection

by March 1st in the first year. After deciding on the subject of research, you and your Research Advisor will select three to five others who agree to serve on the Research Committee, with the stipulation that at least three members of the committee must be members of the Astronomy Department GSC. Until the second-year qualifying exam, this committee functions locally and holds committee meetings at the frequency specified in section I.

4. You must then develop a written Research Proposal (5 pages or less) describing the research to be carried out during the Research Project, have it approved by your Research Committee and then submit to the Graduate Advisor by May 7th of the first year. (D)

5. If you pass your second-year qualifying exam with a grade of "Full Pass", you should apply for PhD candidacy by August 15 of your second year by following the steps in section Q. The first step involves selecting a Dissertation Advisor and Dissertation Committee. Possible options for the selection include the following:

   a) If you decide to pursue a PhD Dissertation project that is closely linked to your second-year project, your Research Advisor typically becomes your Dissertation Advisor, and your Research Committee becomes the basis for the Dissertation committee.

   b) If you opt to change research projects for their PhD and work with a new Dissertation Advisor, your Dissertation Committee may end up being substantially different from the Research Committee of the second-year project. If you choose this route, we recommend that you talk to the Graduate Advisor for guidance. (0)

   c) Other variations are possible. For example, you may, because of the evolution of your research goals or other reasons, decide at this point to change the composition of your committee, while retaining the same Advisor.

6. The final committee membership will be submitted formally to the Graduate Dean to become the Dissertation Committee. Normally, a committee member from outside the department is added at this point. After the committee has been accepted by the Graduate Dean, the Graduate School must approve any committee changes.

The following rules only come into play when the final Dissertation Committee is chosen for presentation to the Graduate School:

. a) One committee member must be a recognized expert on the subject from outside U.T. and must hold a position at another institution that is equivalent to that of a member of the graduate faculty. In special circumstances, that outside member may be a faculty member at UT so long as he or she is a member of a Graduate Studies Committee other than astronomy. The Dissertation Advisor should try to ensure that travel expenses of the outside member to the final colloquium can be furnished from within the department (e.g., grant funds, colloquium fund, or Cox fund).

b) At least three members of the committee must be members of the Astronomy Department Graduate Studies Committee.

c) Non-faculty UT Austin astronomers (including Research Scientists, Postdoctoral Fellows and staff PhD's) may be members of the committee, but the reason and their qualifications for serving on the committee must be furnished to the Graduate Advisor for forwarding to the Graduate Dean. These scientists may not chair the committee but they may serve as co-chair. Non-faculty UT Austin astronomers may not serve as the "outside" member.

d) For PhD defense committees, adjunct professors can serve as members. But, as per Graduate School rules, they cannot be supervisors and they do not count toward the requirement that at least three members of the committee must be members of the Astronomy Department GSC.

e) Only a member of the GSC can be the chairperson of the committee, but if a committee member who is not a member of the GSC is performing a major part of the supervising professor's function, he or she may be appointed co-chairperson. Emeritus and Emeritus-elect Professors may be co-supervisors, but not sole supervisors, of a PhD project. If a Professor moves to emeritus status while serving as supervisor, the Graduate School will require that a co-supervisor be added.

f) Changes to the Dissertation Committee must be approved by the Dissertation Advisor, and then a formal request is made to the Graduate Advisor, who will forward it to the Graduate Dean. You are expected to initiate the process, but the Graduate Coordinator will facilitate the process.

S. Dissertation Proposal

1. Students applying for PhD candidacy must first select a Dissertation Advisor and Dissertation Committee as outlined in section R. Then they must prepare a research proposal, called a Dissertation Proposal, for their PhD Dissertation. The Dissertation Proposal consists of a title, an abstract, the name of the Dissertation Advisor, the names of the proposed Dissertation Committee members, and five or fewer single-spaced pages of discussion, containing the following information:

   a) A description of the research problem, pointing out its importance.

   b) A brief summary of the proposed investigation that will constitute the research for the PhD dissertation.

   c) Discussion of any needs and problems that will be encountered in carrying out the research (observing time, travel, equipment, large amounts of computing, etc.).

   d) A schedule for research starting from after the second-year qualifying exam and then on to the final dissertation defense, focusing on a plan for publishing papers. The plan

must have a schedule that leads to a PhD in 5 years from the time of entry into the graduate program. The proposal must include contingency plans for dealing with issues like observing time lost to bad weather etc.

e) A brief discussion of how the research done for the second-year project will be incorporated in the final PhD Dissertation thesis, which is the sum total of research done by you at UT. (R).

2. Most students will have a Dissertation Project that is closely tied to their second-year Research Project. In such cases, we recommend that students use their second-year Research Proposal as a starting point to develop their Dissertation Proposal.

3. Students must submit their Dissertation Proposal to their Dissertation Committee for review and thereafter modify the proposal to address the committee's comments. Committee members then approve the final Dissertation Proposal and sign the PhD Candidacy Sign-Off Sheet.

4. Students must submit the *PhD Candidacy Sign-Off Sheet* to the Graduate Coordinator and go through the Graduate School's PhD candidacy application process by August 15 of their second year.

5. The Dissertation Proposal can be made available to the GSC by the Graduate Advisor.

T. Final Oral Examination or Defense of Dissertation

1. At the beginning of the semester or summer session during which you hope to take the final oral examination and obtain your degree, a number of administrative steps must be taken, each with its own deadline. Instructions and forms may be obtained from the Graduate Program Coordinator.

2. Having ascertained that the degree requirements have been met, you must submit the Request for Final Oral to the Graduate School at least two weeks before the date of the examination.

   Check with the Graduate Coordinator and Graduate School on the latest attendance rules for the PhD defense. As of 2016, there are two options (traditional or electronic) and they have different attendance rules:" the traditional option of meeting in a room or the virtual (electronic) option of meeting using technology; i.e., teleconferencing or videoconferencing. The intent is that all committee members will participate in the defense either in person or electronically; however, if one committee member that is not the supervisor/co-supervisor is unable to attend the defense, then the member's absence must be explained, together with an assurance that the dissertation will be

read, and if approved, signed." This rule makes it easier to assemble a committee, but it is still imperative to start early to seek a suitable date and time.

You must try to schedule your PhD defense on a date where all committee member can attend, as certified by their signatures on the form (the Dissertation Advisor may sign for a member from another institution who will attend). Forms are available from the Graduate School webpage.

3. The final oral examination cannot be held unless you have placed a complete draft of the dissertation in the hands of all committee members attending the examination at least four weeks before the scheduled date of the examination. You must have a firm understanding with your committee of what constitutes a complete draft (occasionally lists of references and certain appendices may not be required). It is strongly recommended that you have already incorporated into this draft comments and suggestions of committee members based on an earlier draft of the dissertation (or portions thereof) that you submitted to the committee for this purpose.

4. The final oral examination starts with a public oral presentation of the dissertation, roughly 50 minutes in length. Normally, the public presentation is followed by questions from the audience. The audience is then excused, and the committee examines you on the dissertation and material related to the dissertation.

5. The Graduate Dean has furnished the Dissertation Advisor with detailed instructions (Gold Form) as to what possible actions the committee may take regarding passing the examination and revisions of the dissertation. When a decision has been made by the committee, you are informed of the decision, as is the Graduate Dean by the provided signature sheet and/Gold Form.

6. You will make all revisions to the dissertation required by the Dissertation Committee at the final oral examination, obtain approval signatures for the final draft from your entire committee, and upload the final draft in the format required by the Graduate School. In case one committee member (no more and not the Dissertation Advisor) refuses to sign the approval sheet, the Dissertation Advisor may, if he or she wishes, discuss this situation with the Graduate Dean and request the Dean's acceptance of the dissertation with one signature missing. Normally, a copy of the final dissertation is given to each committee member.

7. If the final version of the PhD dissertation is not submitted to the Graduate School by the semester or session deadline, awarding of the degree will be postponed until the commencement for which the deadline is met. You must continue to register as a graduate student until the degree is awarded.

8. The Graduate School requires that if the dissertation is not completed within three years after becoming a candidate, the Dissertation Committee will review progress made at the end of the three-year period, and annually thereafter, and report to the

Graduate Dean their recommendations concerning possible termination of candidacy or conditions for continuation.

U. Financial Aid to Graduate Students

1. The forms of financial aid available to graduate students are:

   a) University fellowships awarded by the Graduate School after April 1 for the following academic year. Nominations are determined in March by the Admissions Committee for incoming students and by the Fellowship Committee for existing students. These nominations are forwarded to the Graduate School by the Graduate Advisor.

   b) Teaching or research assistantships awarded by the department. Commitments of such aid for the following academic year are typically made in August. Research assistantships are worked out between the student and the Advisor.

   c) Summer Session teaching and research assistantships (and occasionally university fellowships). These are awarded separately from the long-session financial aid, usually during late April, with essentially the same procedures as for long-session financial aid followed.

   d) Fellowships, scholarships, or summer appointments from sources other than the University of Texas.

   e) Small grants by the Graduate School for travel to learned society meetings or for research assistance (travel and/or equipment). These are awarded competitively two or three times a year, and notices covering deadlines, conditions of award, and application instructions are posted at appropriate times during the academic year.

   f) Small travel or research grants administered by the student's research group.

   g) Cox Graduate Excellence Funds. The Cox Fund is an endowment maintained by the department to promote excellence in astronomy at the University of Texas. A portion of these funds are generally set aside for the Cox Graduate Excellence Fund overseen by the Graduate Advisor. You may submit a request with the Graduate Advisor for observing runs, attendance at conferences, and other purposes relating to your graduate education. Often students get their travel expenses covered using a combination of funds from their research groups, Advisor, and the Cox Graduate Excellence Fund.

   h) Special financial assistance. If a student has an unusual need for research assistance and there are compelling scientific reasons for such assistance, contacting the department chairperson or the Director of McDonald Observatory may be helpful.

2. The assigning of department assistantships depends on the source of funds. Decisions on teaching assistantships are made by the faculty member in charge of such

assignments that year, in consultation with the department chairperson. Other research assistantships that are paid from research grants are awarded either by or with the consent of the faculty member or research scientist who is principal investigator for the grant. These awards generally are made in accordance with department policies for the awarding of financial aid, as described above. You are free to contact directly the principal investigators of grants at any time concerning financial aid, but any arrangements made must be reported to your Advisor and to the Department Chair.

3. Because the overall picture and the policies for financial aid within the department can change from year to year, you might check with the Chair of the Department of Astronomy or the Graduate Advisor concerning possible changes. Policy memoranda concerning financial aid and award procedures will be distributed as appropriate.

4. Generally speaking, students are not appointed for more than 20 hours/week. Exceptions for special situations are sometimes made; students with valid reasons for appointments in excess of 20 hours/week should consult with the Graduate Advisor. Additional employment outside the department usually impedes progress toward the degree, but it may also provide experience valuable for future careers. For example, if your goal is to teach in a small college, you may benefit from teaching at a local community college. Any outside employment should be discussed with your research advisor and/or the Graduate Advisor.

5. Under the Graduate School's Fourteen-Semester Rule on Student Employment, graduate students may only be employed as Graduate Research Assistant, Teaching Assistant, and other titles for a maximum of 14 long semesters. Exceptions to the Fourteen Semester Rule are only made under very special circumstances. (A)

V. Student Educational Records

1. A file of educational records will be maintained by the Graduate Coordinator for each graduate student. The file will contain such items as the student's application materials, grades, Committee Meeting Evaluation forms and other evaluations, along with copies of petitions and other documents, such as applications for candidacy or degrees and correspondence with the Graduate School regarding the student. You will be allowed to see your own file at any time, with two exceptions: financial statements by parents and letters of recommendation to which you have waived the right of access. You can see your file only in the presence of the Graduate Coordinator or a designated faculty member and may not remove any document from the file. You may place documents in your file to be considered when the Graduate Studies Committee is evaluating you.

2. Security of, access to, challenging of material contained in, and destruction of these files

are governed by the Family Educational Rights and Privacy Act as described in Chapter 9, Appendix C to the University Catalogue: General Information. Only authorized persons will have access to these files.

W. Sources of Information concerning the Graduate Program

1. The Graduate School maintains a webpage with regular updates on their policies, regulations, and administrative procedures. Many Graduate School forms and their instructions can be found on their webpage at http://www.utexas.edu/ogs/.

2. Additional information or answers to questions about department procedures and regulations can be obtained from the following GSC members:

   a) Graduate Advisor and/or Graduate Coordinator
      - Registration (preregistration)
      - Matters involving the Graduate School office that cannot be handled by direct contact (petitions)
      - Pre-candidacy regulations and procedures, including application for candidacy (MA and PhD)
      - Petitions for exceptions to astronomy program regulations
      - Student's record file
      - Graduate school research and travel grants to students

   b) Chair of the Graduate Studies Committee (GSC)
      - Graduate course offerings (scheduling and content)
      - Graduate Studies Committee policies
      - Matters involving the Graduate School office that cannot be handled by direct contact (petitions)
      - Pre-candidacy regulations and procedures, including application for candidacy (MA and PhD)

   c) Faculty member(s) overseeing TA assignments and Chair of the GSC
      - TA course assignments

   d) Chair of the Undergraduate Studies Committee
      - Undergraduate course matters
      - Teaching equipment for undergraduate courses

3. The graduate students have a representative elected by themselves who attends all GSC meetings, except executive sessions, and who can bring suggestions, complaints, or other matters before the GSC as well as present student opinions on matters discussed by the GSC.

4. The Department Chairperson will discuss any matter with a student.

X. English Proficiency Requirement

Below is the GSC policy regarding English proficiency:

1. Demonstrating proficiency in English is an academic requirement in our graduate program. If a student is not a native speaker of English, then proficiency in English must be demonstrated by passing the certification test administered by the University. This must be done whether or not the student is employed as a TA. A student will not be admitted to candidacy for the PhD until certified in English.

2. The deadline for demonstrating proficiency is the beginning of the fall semester of the student's second year in Graduate School. Students who have not met this deadline must petition the Graduate Studies Committee for permission to remain in the graduate program, and must do so annually until certification has been accomplished. Permission to continue in the graduate program will be granted only if the Graduate Studies Committee feels that reasonable progress towards a mastery of English is being made by the student. Students who are allowed to continue will be placed at the bottom of the priority list for TA positions until such time as they are certified.

3. Entering graduate students whose native language is not English must take the proficiency exam preceding their first year. The Department of Astronomy will pay the exam fee. Thereafter, the student will be responsible for the fee for any subsequent exams. A student who has not yet passed the exam will be required to take it every April and November at his or her own expense until certified.

Y. Scholastic Integrity and the Honor Code

Students in our program are expected to follow the Honor Code of the University, as reproduced here:

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

There are further guidelines in specific areas to elaborate the terms of the Honor Code. Here is the statement about Academic Integrity:

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at Austin. More specifically, you and other students are expected to maintain absolute integrity and a high standard of individual honor in scholastic work undertaken at the University. This is a very basic expectation that is further reinforced by the University's Honor Code. At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

For the official policies on academic integrity and scholastic dishonesty, please refer to Chapter 11 of the *Institutional Rules on Student Services and Activities*.

In practice, some assignments in classes will involve collaborative or team work, while other work should be done completely independently. If the expectations of the professor regarding collaboration on a particular assignment are not clear, it is the student's obligation to ask for clarification. Pressuring other students to help you with an assignment that should be done independently is a violation of the Honor Code.

Z. Dismissal from the Program

A graduate student may be dismissed from the program for any of the following reasons.

1. Failure to make adequate progress, as judged by the Research Advisor or the Research Committee.
2. Failure to maintain a B average in coursework.
3. Any violation of the Honor Code, as judged by the GSEC.