

Summary of

Department of Physics and Astronomy
Texas A&M University

GRADUATE STUDENT POLICIES

Fall 2018

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I. Introduction

In addition to the University policies published in the [Graduate and Professional Catalog](#) and the graduate policies enforced by the [Office of Graduate and Professional Studies](#) (OGAPS), this document summarizes the departmental policies of the Department of Physics and Astronomy for student pursuing graduate degrees. **It is the responsibility of each Graduate Student to ensure they have met all Departmental, Graduate and University requirements for their degree.**

II. Academic Standards

A graduate student must maintain a grade point ratio (GPR) of at least 3.0 to receive an advanced degree. A student with a GPR below 3.0 is on academic probation according to the [Graduate and Professional Catalog](#). When the GPR drops below 3.0, a student will be given a one-semester probationary period to bring it back to 3.0 or above. If this is not achieved, the student must meet with their Graduate Advisor to determine whether the student should remain in the Physics and Astronomy graduate program. If the GPR cannot be returned to 3.0 or above within two consecutive semesters (fall or spring), the student will be considered by the Graduate Records Committee for dismissal from the Physics and Astronomy graduate program. A course in which the final grade is a C or lower may be repeated **ONCE** in order to replace the lower grade. If the second grade is higher, the original grade will remain on the permanent record, but it will not be used to compute the cumulative and Degree Plan GPRs. In accordance with University rules, any further repeat would be treated as an additional grade that will be included along with the previous grade for GPR computations. More information can be found in the Student Rules Handbook – [Rule 10](#). Failure to make reasonable progress in the other areas of graduate study, particularly research, is also grounds for a recommendation that a student be dropped from the graduate program. Such a recommendation is to be made by the Graduate Records Committee, with input from the student's research advisor.

III. Minimum Course Load

To be considered full-time, graduate students must carry a 9-hour course load each fall and spring semester. This can be a combination of up to three academic courses (typically 3 hours each) and/or research hours (PHYS or ASTR 685/691). Students are encouraged to complete the required academic courses as quickly as possible (see [PhD](#) and [MS](#) degree

plans). First year students should consult the graduate advisors to select an appropriate set of fall or spring courses. The summer full-time minimum load for graduate students is three hours per 5-week session or six hours per 10-week session. In most cases, these will be research hours.

Full-time registration is a University requirement for students while receiving support on a teaching or research assistantship, or a Department or University fellowship. Students should also be aware of the University's continuous registration requirement. If a student does not plan to register in the fall or spring due to unusual circumstances, a Leave of Absence petition may be required.

The Physics and Astronomy Department expects all students to preregister during the designated preregistration period each semester. Preregistration is important to both the students and Department since it allows the Department to finalize the list of course offerings and also to make the TA assignments in a timely manner. Additionally, failure to register in a timely manner can result in a delay of tuition and stipend payment.

IV. MS and PhD Advisory Committee

Each grad student is required to have an Advisory Committee to supervise his or her graduate program. The department encourages students to select a committee as early as possible. The first step is the choosing a research advisor/chair, who will then assist in the selection of faculty to be the other committee members. All committee members must be [approved graduate faculty](#) at the university. The committee should be closely involved in all aspects of the student's graduate education and research, and will approve each step required for graduation.

MS Committee The Advisory Committee is composed of at least three members: a chair, normally the same as the research advisor, plus one Graduate Faculty member from the Physics and Astronomy Department and one member from outside the Department. The Graduate Catalog requires that this committee be selected and a Degree Plan approved **prior** to registration (or preregistration) for a fourth term, excluding summer terms. The Degree Plan, with the selected committee, must be approved at all levels, including the final approval by OGAPS, before a student will be approved to hold a Final Exam. See [Master's Degree Timeline](#) for more details.

PhD Committee The Advisory Committee is composed of at least four members: a chair, normally the research advisor, and at least two Graduate Faculty members from the

Department and one from outside the Department. The three Department faculty members must include at least one theorist and one experimentalist, except for students in Astronomy. The Graduate Catalog requires that this committee be selected and a Degree Plan approved **prior** to registration (or preregistration) of your fifth semester, excluding summers. The Degree Plan, with the selected committee, must be approved at all levels, including the final approval by OGAPS, before a student will be approved to hold a Preliminary exam. See [PhD Degree Timeline](#) for more details.

V. [Steps to Graduation](#)

Degree Plan (required for all graduate degrees)

The **degree plan** is the formal list of courses and research hours the student will complete to meet the requirements for graduation, required of all graduate students. The student should consult with their Advisory Committee Chair (see [section IV](#)), and then electronically submit the Degree Plan (<https://ogsdpss.tamu.edu/>). Physics and Astronomy Advising will begin the electronic approval process, after it is determined all rules for the degree plan and committee have been met. After the Advisory Committee Chair has approved the degree plan online, it will automatically be sent to the student's committee for approval. It will then be approved by the Department Head before being forwarded to OGAPS.

For detailed OGAPS requirements, the student should consult the [Graduate and Professional Catalog](#). Assistance in preparing the Degree Plan may be obtained from Physics and Astronomy Advising.

[Proposal](#) (required for PhD and MS Thesis Option)

The **proposal** is a comprehensive statement on the extent and nature of the student's planned dissertation or thesis research. It is required for MS Thesis Option and PhD students. Students should prepare the proposal in consultation with their research advisor, and as a general guide, this documents would typically include about 1/3 introduction/literature review, 1/3 summary of work to date, and 1/3 proposed new work. A general guideline would be 15 - 20 pages, but the format and length should be discussed with the advisor and committee.

Preliminary Exam (required for PhD degrees only)

The **preliminary exam** is one of the requirements for the PhD. The TAMU rules for the preliminary examination, including the allowable timing of the exam, can be found in the [Graduate and Professional Catalog](#). It is strongly recommended that the preliminary exam be taken no later than in the 4th year of the student's PhD program. Or, in the rare case that completion of formal coursework takes longer than 4 years, it is strongly recommended that the prelim be taken within a semester of completing the formal coursework on the degree plan. Timely completion of this exam will indicate adequate progress toward the student's degree, and will serve as an important factor when considering their eligibility for any form of departmental support, including teaching assistantships, fellowships and travel grants. The format of the exam is determined by the student's Advisory Committee, and will typically include an oral presentation of the student's dissertation proposal, followed by a question and answer period, in addition to any written parts. The general purpose of the exam is to evaluate the student's readiness to pursue full-time research towards a Ph.D. degree, and to test their grasp of the broader field's background and their knowledge of the basic science that forms the core of their field of study. The student is expected to demonstrate a broad understanding of the core concepts, familiarity with the current and prior research in the chosen subfield, as well as proficiency in techniques necessary to pursue his or her proposed research. The preliminary exam also serves as an opportunity for the Advisory Committee to provide additional research guidance and feedback while evaluating the student's dissertation proposal. Additional topics for the oral exam may include more fundamental questions on Physics and Astronomy related to the proposed dissertation research.

Residency (required for all degrees)

MS Non-Thesis and Thesis Option - One semester must be spent in resident study (9 hours). PhD - If entering with a baccalaureate degree, one year plus one semester must be spent in resident study. If entering with a master's degree, or a DVM or MD from a U.S. institution, one year must be spent in resident study. One year may include two adjacent long semesters or one long semester and one adjacent 10-week summer term of 9 hours each.

Candidacy (required for PhD only)

To be admitted to Candidacy one must:

Complete all course work on the degree plan with the exception of any remaining 691

Have a graduate GPR of at least 3.0 (Program GPR)

Have a degree plan GPR of at least 3.0, with no grade lower than C in any course on the degree plan

Pass the preliminary exam

Have an approved dissertation proposal

Meet the residency requirements

Final Exam (required for all degrees)

MS Non-Thesis Option

The **final oral exam** must be taken by the dates announced each semester by [OGAPS](#), found on the [Calendars & Deadlines](#) page. It may not be taken prior to the mid-point of the semester or summer term in which the student will complete all remaining courses on the degree program. This exam will be given by the student's Advisory Committee. This exam covers the degree work, including basic concepts of physics. For those students engaged in advanced laboratory or theoretical work in one of the Department's research groups, the exam will normally include a presentation describing the research activities in which the student was engaged, in addition to more general questions about Physics and Astronomy concepts.

MS Thesis Option and PhD

The **final oral exam** is one of the last requirements for the MS Thesis Option and PhD degrees. It must be taken by the dates announced each semester by [OGAPS](#), found on the [Calendars & Deadlines](#) page. TAMU rules for this exam such as required forms and allowable timing, may be found in the [Graduate and Professional Catalog](#), and on the OGAPS website. The oral exam is taken after the written thesis/dissertation is complete. A typical sequence would be for the student to write the thesis/dissertation, work with the research advisor to refine it, then distribute the completed thesis/dissertation to the Committee to review in advance of the final exam. The oral exam will include a presentation of the thesis/dissertation results with questions from the Advisory Committee. The Committee must separately approve the written thesis/dissertation (before or after the oral exam). Note that although University rules do not specify the ordering in which these events occur, in our Department (and in most Departments),

the Committee will almost always expect to review the dissertation prior to the oral exam. See [MS Timeline](#) and [PhD Timeline](#) for more details.

Thesis/Dissertation - (required for PhD and MS Thesis Option)

The thesis or dissertation is a complete written record of the research methods and results developed during a student’s MS or PhD study. For the case of the dissertation, this will normally include a description of research, which is also published in the scientific literature. The TAMU Thesis Office has specific rules about the formation for this document, as well as the citation of figures and prior work, etc. Beyond this, the Advisory Committee will review the content for accuracy and completeness before providing the required formal approval.

VI. PhD Degree Plans

The PhD Degree Plan for a student with an MS degree normally includes all of the PhD required courses, except for any taken at Texas A&M University and already appearing on the MS degree plan, or any for which the student has tested out. Elective courses designated by the Advisory committee, and a sufficient number of credit hours in PHYS or ASTR 685/691 to make a total of 64 credit hours will complete the degree plan.

The PhD Degree Plan for a student who does not have an M.S. degree normally includes a set of courses identical to what is described above, except with a total of 96 hours.

A. The PhD Degree Plan in Physics will include the following nine basic courses:

<u>Course</u>	<u>Hours</u>	<u>Prerequisites</u>
(1) 601 – Analytical Mechanics	3 credit hours	PHYS 303, MATH 311 and 412, concurrent registration in PHYS 615
(2) 603 – Electromagnetic Theory	3 credit hours	PHYS 304, PHYS 615
(3) 606 – Quantum Mechanics	3 credit hours	PHYS 412, MATH 311 and 412, concurrent registration in PHYS 615
(4) 607 – Statistical Mechanics	3 credit hours	PHYS 408 and 412, PHYS 615
(5) 615 – Methods of Theoretical Physics I	3 credit hours	MATH 311, 407, and 412
(6) 624 – Quantum Mechanics	3 credit hours	PHYS 606
(7) 611 – Electromagnetic Theory	3 credit hours	PHYS 603
	High-energy/Nuclear:	

<p>(8-9) Two graduate courses chosen from three distribution electives: high energy/nuclear, AMO/condensed matter and/or Astronomy.</p> <p>Note: If only choosing two courses, both cannot come from same area.</p>	<p>Nuclear Physics (625) Particle Physics (627) Quantum Field Theory (634) Relativity and Cosmology (644)</p> <p>AMO/Condensed Matter: Atomic Physics/Quantum Optics (648, 649) Solid State Physics (617, 631, 632)</p> <p>Astronomy: ASTR 601/PHYS 641 ASTR 603/PHYS 643 ASTR 605/PHYS 645 ASTR 606/PHYS 646</p>
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Equivalent courses acceptable for bolded courses. Seek advisor assistance for registration.

A grade of B or better on each course numbered 1 through 6 above is required in order to achieve PhD Qualification in Physics. It is a requirement of the Department that students complete their Qualifying courses before taking elective courses, except for electives taken as a third course while completing the Qualifying sequence, unless approved by the Graduate Faculty Advisor or the student's Advisory Committee Chair. This is in addition to the TAMU requirement that the average of all coursework appearing on the degree plan should correspond to a B average (3.0 GPA) and that the cumulative GPA should be a 3.0 or B average.

In addition to these nine required courses, the student and/or his committee may add other specialty courses appropriate to his research area.

B. The **PhD Degree Plan in Applied Physics** will include the following ten courses, plus sufficient additional credits of electives or research hours to total 64 or 96 credit hours, as per the TAMU requirement for students obtaining a Ph.D. with or without an MS degree:

<u>Course</u>	<u>Hours</u>	<u>Prerequisites</u>
(1) 601 – Analytical Mechanics	3 credit hours	PHYS 303, MATH 311 and 412 , concurrent registration in PHYS 615
(2) 603 – Electromagnetic Theory	3 credit hours	PHYS 304 , PHYS 615
(3) 606 – Quantum Mechanics	3 credit hours	PHYS 412, MATH 311 and 412 , concurrent registration in PHYS 615

(4) 607 – Statistical Mechanics	3 credit hours	PHYS 408 and 412 , PHYS 615
(5) 615 – Methods of Theoretical Physics I	3 credit hours	MATH 311, 407, and 412
(6) One course in Classical or Quantum Physics:		
PHYS 611 (EM II)	ATMO 601 (Fund. Of Atmospheric Dynamics)	
PHYS 617 (Solid State Physics)	CHEM 633 (Principles of Inorganic Chemistry)	
PHYS 624 (QMII)	CHEM 649 (Mol. Quantum Mechanics)	
PHYS 625 (Nuclear Physics)	CHEM 673 (Symmetry/Group Theory)	
PHYS 648 (Q. Optics and Laser Physics)	ECEN 635 (EM)	
PHYS 619 (Modern Comp. Physics)	ECEN 657 (Quantum Electronics)	
AERO 602 (Theory of Fluid Dynamics)	GEOG 611 (Geomechanics)	
MATH 605 (Math. Fluid Mechanics)	NUEN 607 (Plasma & Thermonuclear Eng.)	
MATH 614 (Dynamical Systems & Chaos)	OCNG 618 (Accoustical Oceanography)	
MATH 604 (Math. Foundations of Continuum Mechanics)		
(7) Four elective courses chosen in consultation with the student's committee.		

Equivalent courses acceptable for bolded courses. Seek advisor assistance for registration.

A grade of B or better on each course numbered 1 through 5 above is required in order to achieve PhD Qualification as an Applied Physics candidate. It is a requirement of the Department that students complete their Qualifying courses before taking elective courses, except for electives taken as a third course while completing the Qualifying sequence, unless approved by the Graduate Faculty Advisor or the student's Advisory Committee Chair. This is in addition to the TAMU requirement that the average of all coursework appearing on the degree plan should correspond to a B average (3.0 GPA) and that the cumulative GPA should be a 3.0 or B average.

C. The **PhD Degree Plan in Astronomy** will include the following eight courses, plus sufficient additional credits of electives or research hours to total 64 or 96 credit hours, as per the TAMU requirement for students obtaining a Ph.D. with or without an MS degree:

<u>Course</u>	<u>Hours</u>	<u>Prerequisites</u>
(1) ASTR 601/PHYS 641 – Extragalactic Astronomy	3 credit hours	PHYS 601 or ASTR 314 and PHYS 302
(2) ASTR 602/PHYS 642 – Astronomical Observation and Instrumentation	3 credit hours	PHYS 615

(3) ASTR 603/PHYS 643 – Stellar Astrophysics	3 credit hours	PHYS 606 and PHYS 607
(4) ASTR 604/PHYS 644 - Cosmology	3 credit hours	PHYS 615
(5) ASTR 605/PHYS 645 – Galactic Astronomy	3 credit hours	PHYS 601 and PHYS 607
(6) ASTR 606/PHYS 646 – Radiative Processes and the Interstellar Medium	3 credit hours	PHYS 302 and PHYS 304 and PHYS 408 and PHYS 412
(7) PHYS 615 – Methods of Theoretical Physics I	3 credit hours	MATH 311, 407, and 412
(8) One additional 3 hour Physics course to be chosen from:	PHYS 601 – Analytical Mechanics PHYS 603 – Electromagnetic Theory I PHYS 606 – Quantum Mechanics PHYS 607 – Statistical Mechanics	

Equivalent courses acceptable for bolded courses. Seek advisor assistance for registration.

A grade of B or better is required in all ASTR and PHYS courses. A student is considered qualified when they have completed an oral examination presenting and summarizing their research to date and outlining their PhD Thesis plan. This exam is generally held in the Fall of the third year.

VII. Master's Degree Plans

Graduate students have two options for pursuing an MS degree in Physics. They may choose to register themselves as an MS student, or they may add a secondary curriculum of an MS degree to a PhD program. Students who register as an MS student and choose to continue with a PhD program will submit a University Letter of Intent. Please see an Academic Advisor for more information on these options.

A. The **MS Thesis Option in Physics Degree plan** normally includes the following graduate courses:

<u>Course</u>	<u>Hours</u>	<u>Prerequisites</u>
(1) 601 – Analytical Mechanics	3 credit hours	PHYS 303, MATH 311 and 412, concurrent registration in PHYS 615

(2) 603 – Electromagnetic Theory	3 credit hours	PHYS 304 , PHYS 615
(3) 606 – Quantum Mechanics	3 credit hours	PHYS 412, MATH 311 and 412 , concurrent registration in PHYS 615
(4) 607 – Statistical Mechanics	3 credit hours	PHYS 408 and 412 , PHYS 615
(5) 615 – Methods of Theoretical Physics I	3 credit hours	MATH 311, 407, and 412
(6) A maximum of 8 hours of 691 or 685, combined up to 12, i.e., 8 hours of PHYS 685 and 4 hours of PHYS 691 or 5 hours of PHYS 685, 4 hours of PHYS 691; all MS thesis option degree plans must contain at least 1 hour of 691. A sufficient number of credit hours in other physics courses must be added to the Degree Plan to make a total of 32 credit hours.		

Equivalent courses acceptable for bolded courses. Seek advisor assistance for registration.

A B average on all coursework and a B average on all courses on the Degree Plan are required for the M.S. degrees in Physics. If a student makes a grade of C or lower in a basic course that is on his or her Degree Plan, it is recommended that the student repeat that course and attain a grade of A or B.

An advanced undergraduate course with a grade of B or better may be substituted for one of the graduate courses 601 (PHYS 302), 603 (PHYS 304), 606 (PHYS 412), 607 (PHYS 408), or 615 (MATH 601 and 602). If this is done, the student must take one additional graduate level course in physics.

B. The **MS Non-Thesis Option in Physics Degree plan** normally includes the following graduate courses:

<u>Course</u>	<u>Hours</u>	<u>Prerequisites</u>
(1) 601 – Analytical Mechanics	3 credit hours	PHYS 303, MATH 311 and 412 , concurrent registration in PHYS 615
(2) 603 – Electromagnetic Theory	3 credit hours	PHYS 304 , PHYS 615
(3) 606 – Quantum Mechanics	3 credit hours	PHYS 412, MATH 311 and 412 , concurrent registration in PHYS 615
(4) 607 – Statistical Mechanics	3 credit hours	PHYS 408 and 412 , PHYS 615

(5) 615 – Methods of Theoretical Physics I	3 credit hours	MATH 311, 407, and 412
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(6) **OPTIONAL: PHYS 685 (Directed Studies) *-** Students may include up to the maximum eight hours allowed on non-thesis M.S. degree plans. The student will work in a research laboratory or on a theoretical project supervised by a tenured or tenure-track faculty member. Depending upon a student’s career goals, this option is highly recommended as part of the M.S. program, although not required. A written project report is generally not required for this option, but the student should discuss expectations with the faculty member when electing this option.

*The Office of Graduate and Professional Studies will not accept PHYS 691 in this degree plan.

(7) A sufficient number of credit hours in other elective physics courses must be added to the Degree Plan to make a total of 36 credit hours.

Equivalent courses acceptable for bolded courses. Seek advisor assistance for registration.

A B average on all coursework and a B average on all courses on the Degree Plan are required for the MS degrees in Physics. If a student makes a grade of C or lower in a basic course that is on his or her Degree Plan, it is recommended that the student repeat that course and attain a grade of A or B.

An advanced undergraduate course with a grade of B or better may be substituted for one of the graduate courses 601 (PHYS 302), 603 (PHYS 304), 606 (PHYS 412), 607 (PHYS 408), or 615 (MATH 601 and 602). If this is done, the student must take one additional graduate level course in physics.

C. The **MS Non-Thesis Option in Astronomy Degree Plan** normally includes the following graduate courses:

<u>Course</u>	<u>Hours</u>	<u>Prerequisites</u>
(1) ASTR 601/PHYS 641 – Extragalactic Astronomy	3 credit hours	PHYS 601 or ASTR 314 and PHYS 302

(2) ASTR 602/PHYS 642 – Astronomical Observation and Instrumentation	3 credit hours	PHYS 615
(3) ASTR 603/PHYS 643 – Stellar Astrophysics	3 credit hours	PHYS 606 and PHYS 607
(4) ASTR 604/PHYS 644 - Cosmology	3 credit hours	PHYS 615
(5) ASTR 605/PHYS 645 – Galactic Astronomy	3 credit hours	PHYS 601 and PHYS 607
(6) ASTR 606/PHYS 646 – Radiative Processes and the Interstellar Medium	3 credit hours	PHYS 302 and PHYS 304 and PHYS 408 and PHYS 412
(7) PHYS 615 – Methods of Theoretical Physics I	3 credit hours	MATH 311, 407, and 412
(8) One additional 3 hour Physics course to be chosen from:	PHYS 601 – Analytical Mechanics PHYS 603 – Electromagnetic Theory I PHYS 606 – Quantum Mechanics PHYS 607 – Statistical Mechanics	
(9) OPTIONAL: PHYS 685 (Directed Studies)* - Students may include up to the maximum eight hours allowed on non-thesis M.S. degree plans. The student will work in a research laboratory or on a theoretical project supervised by a tenured or tenure-track faculty member. Depending upon a student's career goals, this option is highly recommended as part of the M.S. program, although not required. A written project report is generally not required for this option, but the student should discuss expectations with the faculty member when electing this option. *The Office of Graduate and Professional Studies will not accept ASTR 691 in this degree plan.		
(10) A sufficient number of credit hours in other elective physics courses must be added to the Degree Plan to make a total of 36 credit hours. Note that this may include a maximum of two hours of ASTR 681, Seminar.		

Equivalent courses acceptable for bolded courses. Seek advisor assistance for registration.

A B average on all coursework and a B average on all courses on the Degree Plan are required for the M.S. degree in Astronomy.

VIII. Graduate Assistant Teaching (GAT) and Graduate Assistant Non-Teaching (GANT)

All incoming students are required to attend departmental and university Teaching Assistant training. The department TA training will be scheduled for one week, in one of the two weeks before the beginning of classes. More information about the University training can be found at the [Center for Teaching Excellence](#) website. Requests for GAT and GANT positions are made each semester through the [Physics and Astronomy database](#). Logging into this website requires that your Dept. of Physics and Astronomy password be current. Please contact the [Computer Support Group](#) for assistance.

Appointments

The Department selects incoming students for teaching assistantships on the basis of merit. Continuing students are also expected to show good progress towards the degree in order to be given high priority for a TA. The initial appointment is normally for a period of nine months. After the first academic year, the student is expected to progress toward choosing a research advisor and beginning the thesis or dissertation work and to seek support as a research assistant.

It is intended that students holding a TA not only perform their teaching duties diligently but also spend their remaining time vigorously pursuing their graduate studies. The student must therefore show substantial progress in coursework and/or research, and may not undertake outside jobs. Also, students supported on teaching assistantships, research assistantships, or fellowships are expected to take only coursework relevant to their Physics or Astronomy Degree, unless approved by the Graduate Faculty Advisor or the student's Advisory Committee Chair. Registration for a course outside of the department in any semester requires written approval of the Graduate Advisor Chair.

TA positions are a limited resource, and for students beyond the first year the Department employs a priority system for assigning these positions. Students should be aware that in a given term, some or all of the lower priority applicants may not receive requested support. The following guidelines will be used by the Credentials Committee in establishing these priorities:

1. Academic Performance

All graduate students are expected to maintain a 3.0 GPR in the required courses. Students with GPR in required courses above 3.0 are given highest priority. A student who has six or more hours of C or below a 3.0 GPR for more than one regular semester is unlikely to be supported.

2. Job Performance

All TAs must take their teaching responsibilities seriously. Lab and recitation TAs must be on time and prepared for each class meeting, and must cooperate fully with the instructor for the lecture portion of the course. This includes responding to emails and other communications in a timely manner. Each semester the faculty who were assigned TAs will be polled to identify students whose job performance was superior, as well as those whose performance was deficient. This information will be collected by the Credentials Committee. Students identified as showing poor performance will have a lower priority for TA allocation. When appropriate, the Credentials Committee will give a written warning to the student that their job performance must improve if support is to continue. The Department will provide help (mentoring, selection of TA assignment) to those students who need help in improving their teaching performance.

3. Research Progress

After the first academic year, students making good progress should show demonstrated steps toward finding a research group, for example, meeting with potential advisors, or attending group meetings. For such students without a research group, the Graduate Faculty Advisor may work with the student to devise a plan of progress toward the degree as a condition of continued support. After the second academic year the student is expected to have found a research advisor to work with, who will support their candidacy for a TA position thereafter, if necessary. Students not taking a full load of core courses are expected to be vigorously involved in research. In those cases where the Credentials Committee feels it is appropriate, it may ask the student's research advisor for a written statement of progress and anticipated timetable for degree completion. Visible signs of progress include research proposal submission, prelims, publications, and research presentations. With input from the research advisor, the Credentials Committee may assign a lower priority to students not making adequate progress, or may establish a date of expected completion after which TA support will cease.

The number of assistantships available for the summer session is usually much smaller than in the corresponding fall and spring semesters. Consequently, all graduate students are encouraged to seek other summer support in the form of full or part-time research assistantships or fellowships.

The awarding of research assistantships is left solely to the principal investigator(s) of the research grant or contract.

Duties

Most teaching assistants serve as recitation and laboratory instructors (GAT); a few serve as graders or staff the Dept. of Physics and Astronomy Help Desk (GANT). Graduate students serving in GAT or GANT positions will be subject to the responsibilities of these positions. Details will be provided at the TA training sessions.

IX. Graduate Assistant Research (GAR)

Graduate students who enter the Department of Physics on Research Assistantships normally accept this position for a period of time specified in their award letter. This appointment is considered half time based on a forty-hour workweek. First-year students given such support who are considering a switch to another research assignment (or teaching assignment, if available), should consult with the Graduate Advisor regarding the possibility of such a switch. At the end of the appointment, students may choose to remain with their original major professor, or they may change major professors subject to availability of support. It should be noted, however, that when a student changes major professors, the student could take longer to receive his/her degree. Also, should a student feel that he/she is being required to do things outside the realm of normal Physics and Astronomy Department duties, the student is strongly encouraged to report such inequities to the Department Head who will turn the matter over to a grievance committee, which will then perform a thorough investigation.

Requests for GAR positions are made each semester through the [Physics and Astronomy database](#). Logging into this website requires that your Dept. of Physics and Astronomy password be current. Please contact the [Computer Support Group](#) for assistance.

X. Annual Evaluations

Each academic year, all graduate students will have an evaluation completed by their research advisor. For students without research advisors, a member of the Graduate Records Committee will be assigned to complete the evaluation. The evaluation process is designed

for the purpose of starting a one-on-one discussion between a supervisor and each of their students. From this discussion a student needs to get a clear idea on their progress towards a degree, the quality and appropriateness of their research and teaching, as well as goals for the future. Each evaluation needs to be signed by the supervisor and by the student, to acknowledge that the discussion took place and the evaluation is known to both. Evaluations will be kept by the department as a record of the student's standing. Evaluations are mandatory, and may influence a student's eligibility for teaching support. The evaluation process generally occurs in May. Evaluations are recorded in the Physics and Astronomy database and are linked to each student individually.

XI. International Students English Language Proficiency Requirement

To serve as a GAT, an international student must demonstrate a higher level of English Proficiency – English Proficiency Certification. International students entering the Physics and Astronomy Department must achieve “Certified” status in English as soon as possible; the Department cannot assign students to recitation or laboratory sections until they have been “Certified”. A student who fails to achieve certification will be required to participate in additional training sessions throughout the semester, through the [Center for Teaching Excellence](#) and/or the Department of Physics and Astronomy. Note that certification corresponds to “Level 1” in the list of University eligibility levels below.

Eligibility for Students Serving in Teaching Positions:

	Global Standardized Tests			Locally Administered (on Texas A&M campus) Exam
Level #	TOEFL speaking section	IELTS speaking section	PTE speaking section	ELPE oral exam
1	26-30	>=8.0	>=85	80
2	23-25	7.0-7.5	75-84	75
3	<23	<7.0	<75	<75

Level 1: Students eligible for teaching assignments

Level 2: Students conditionally eligible for teaching assignments for one semester only, but

must simultaneously participate in Center for Teaching Excellence English Language Proficiency (CTE-ELP) instruction and achieve a certifying score on the oral section of the ELPE by the end of the semester.

Level 3: Students not eligible for teaching assignment. Students should participate in spoken language training (such as those offered by CTE-ELP or other independent English language instruction providers) to assist them in meeting English language proficiency requirements.

XII. Graduation Timelines

Master's Degree Timeline

Continuous registration is required throughout the degree in the fall and spring semesters.

Registration in the summer term(s) is only required for the semester the student will take their final exam.

- 3 semesters of classes
- Degree plan due, choose committee chair and members (see [degree plan examples](#))
- Proposal for Thesis (Thesis Option Only)
 - Printed copy of the proposal and the [Proposal Approval Form](#)
 - Must be submitted at least 20 working days prior to submitting the “Request and Announcement of Final Exam”
- Final
 - “[Request and Announcement of Final Exam](#)” must be submitted at least 10 working days prior to the Final Exam
 - Cumulative and major GPA at least 3.0
 - No unresolved grades of D, F or U on degree plan
 - Original signatures on Report of Final Exam (this form will be provided to the student’s research chair upon approval by OGAPS; it cannot be downloaded from the OGAPS website)
 - Results turned in no later than 10 working days from date of exam
- Thesis (Thesis Option only)
 - Upload Thesis
 - Submit [Thesis Approval Form](#)
 - [Submit Copyright and Availability Form](#)
- Graduation Application (available on [Howdy](#))

Check Dates and Deadlines on [OGAPS Calendars and Deadlines](#) webpage

PhD Degree Timeline

Continuous registration is required throughout the degree in the fall and spring semesters. Registration in the summer term(s) is only required for the semester the student will defend and submit their dissertation.

- 4 semesters of classes
- Degree plan due, choose committee chair and members is due in the fourth long semester (see [degree plan examples](#))
- Proposal for Dissertation
 - Printed copy of the proposal and the [Proposal Approval Form](#)
 - Must be submitted at least 20 working days prior to submitting the “Request and Announcement of Final Exam”
- Prelim
 - [Preliminary Exam Checklist and Report](#)
 - Prelim Exam Checklist must be signed by the Department at least one day before the prelim exam
 - May not be scheduled until 90 days after the degree plan is submitted
 - Cumulative and major GPA at least 3.0
 - No more than 6 hours of academic coursework remaining
 - One sub allowed, but not for chair
 - Results turned in no later than 10 working days from date of exam
- Final Oral Exam
 - “[Request and Announcement of Final Exam](#)” must be submitted at least 10 working days prior to the Final Exam
 - Results must be submitted to OGAPS before “Request and Announcement of Final Exam”
 - Cumulative and major GPA at least 3.0
 - No unresolved grades of D, F or U on degree plan
 - Must be formally admitted to candidacy

- Original signatures on Report of Final Exam (this form will be provided to the student's research chair upon approval by OGAPS; it cannot be downloaded from the OGAPS website)
- Results turned in no later than 10 working days from date of exam
- Dissertation
 - Final approval can be one year after final exam to graduate, however note that the dissertation draft is written and distributed before final exam.
 - [Submit Dissertation Approval Form](#)
 - [Submit Copyright and Availability Form](#)
 - [Online Survey of Earned Doctorates and AAUDE Survey](#)
- Graduation Application

Apply for graduation through [Howdy](#) in the semester the dissertation will be submitted (unless there are unusual circumstances)

Check Dates and Deadlines on [OGAPS Calendars and Deadlines](#) webpage

XIII. Degree Evaluation and Degree Plan Examples

Degree Evaluation

[Howdy](#) – My Record Tab

You are signed in as skessler

Graduation Options- <ul style="list-style-type: none"> • Application for Graduation • Graduation Status Check • Final Degree Audit/Graduation Clearance • More Graduation Information • Undergraduate Tuition Rebate Apply Status ☉ Undergraduate Students ☉ Graduate Students 	Subscribed Viewer Message Options- <p>You are viewing this tab as a subscribed applicant or student.</p> <p>IMPORTANT: Click Manage Student View to remove or change student views.</p>	Parent/Guardian Access Options- <p>Add or Edit Access</p> <p>Select one of the links below to set up parent/guardian access for the related area. Access for billing must be requested separately.</p> <ul style="list-style-type: none"> ☉ Academic Records & Campus Services ☉ Billing 	
Registration Options- <ul style="list-style-type: none"> • Registration Time Assignment - CS • Search Class Schedule • Add or Drop Classes ☉ Registration Status • Distance Education Location Update • Lab Safety Acknowledgment • Math Placement Exams ☉ Book Prices 	Grades and Transcripts Options- <ul style="list-style-type: none"> • Grades ☉ Important Note About Grades ☉ Duplicate Diplomas ☉ Official Transcript • Unofficial Transcript • Unofficial Transcript (PDF) • Holds • Test Scores • Credit By Examination • TSI and Core Curriculum 	Academic Resources Options- <ul style="list-style-type: none"> ☉ Undergraduate Education ☉ Graduate Education ☉ Academic Information ☉ Academic Programs 	
My Schedule Options- <ul style="list-style-type: none"> • My Schedule • Verification of Enrollment ☉ Final Exam Schedules ☉ Change Class/KINE Options 	My Information Options- <ul style="list-style-type: none"> • Withhold Directory Information • Student Information ☉ View/Update Contact Information • Update Race and Ethnicity • View Certified Dependent • Update your NetID password • Undergraduate Tuition Rebate Apply Status 	Student Rules Options- <ul style="list-style-type: none"> ☉ Student Rules & Regulations • Aggie Honor Code 	
Purchase Optional Services - College Station Campus Options- <ul style="list-style-type: none"> • AggiePrint • Athletics Sports Pass • Campus Directory • Dining Plan Tracker • MSC OPAS • Parking Pass • Yearbook ☉ Parking Pass: HSC Locations 	Degree Evaluation Options- <ul style="list-style-type: none"> Application for Graduation View Degree Evaluation Courses Counting for Financial Aid Excess Credit Hours Rule Upper Level Business Application Accumulated Doctoral Hours Transfer Course Equivalency 	Undergraduate Degree Planner Options- <ul style="list-style-type: none"> Undergraduate Degree Planner Undergraduate Degree Planner Guide (PDF) Degree Planner FAQ 	
			Learn About the My Record Tab Options- <ul style="list-style-type: none"> • Frequently Asked Questions ☉ Registration Tutorials ☉ Degree Evaluation Tutorials

After you choose your degree and the semester you began, you will see these options:

General Requirements - a brief view of completed coursework
****Detail Requirements** - recommended view, shows requirements completed, in progress and remaining
Additional Requirements - displays non-course requirements and rejected courses

General Requirements
 Detail Requirements
 Additional Information

Choosing additional information will show the degree requirements and their status:

Additional Information

Ph.D.

Program : PHD [SC]

Program Non-Course Requirements - Met

Met	Description	Year Limit	Status	Status Date	Action
Yes	Doctoral Degree Plan		Approved	May 10, 2013	
Yes	Preliminary Examination	4	Passed	Oct 16, 2015	
Yes	Doctoral Research Proposal		Approved	Nov 17, 2015	
Yes	Doctoral Residence Req		Completed	Nov 15, 2013	
Yes	Admission to Candidacy		Completed	Oct 28, 2016	
Yes	Doctoral Defense	1	Passed	May 08, 2017	
Yes	Dissertatn/Rec of Study		Thesis/Dissertation Cleared	Aug 01, 2017	

MS Non-Thesis Option

Program : MS [SC] Non-thesis option

Program Non-Course Requirements - Met

Met	Description	Year Limit	Status	Status Date	Action
Yes	Master's Degree Plan		Approved	Jun 23, 2017	
Yes	Master's Residence Req		Completed	Sep 13, 2017	
Yes	Final Examination/Defense		Passed	Sep 26, 2017	

MS Thesis Option (Final Examination/Defense is Passed, this requirement always shows as no)

Program Non-Course Requirements - Not Met

Met	Description	Year Limit	Status	Status Date	Action
Yes	Master's Degree Plan		Approved	Feb 16, 2016	
Yes	Master's Research Proposal		Approved	Feb 18, 2016	
Yes	Master's Residence Req		Completed	Mar 16, 2016	
No	Final Examination/Defense	1	Passed	Apr 01, 2016	
Yes	Thesis		Thesis/Dissertation Cleared	Jun 13, 2016	

Degree Plan Examples – these are examples only, yours will likely look different

PhD in Physics degree plan with no completed MS degree

Proposed course of study in partial fulfillment of the degree of PHD, Thesis, with a major in PHYS, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
PHYS601	ANALYTICAL MECHANICS	3.00	A	201511	
PHYS603	ELECTROMAGNETIC THEORY	3.00		201611	
PHYS606	QUANTUM MECHANICS	3.00	A	201431	
PHYS607	STATISTICAL MECHANICS	3.00	A	201531	
PHYS611	ELECTROMAGNETIC THEORY	3.00		-----1	
PHYS615	METH OF THRTCL PHYS I	3.00	A	201431	
PHYS624	QUANTUM MECHANICS	3.00	A	201511	
PHYS627	ELEM PARTICLE PHYS I	3.00		-----1	
PHYS648	QUANTUM OPT LASER PHYS	3.00		-----1	
PHYS649	PHYSICS OF OPTOELEC DEVICES	3.00		201611	
PHYS689	SPTP: ULTRAFAST LASER PHYS	3.00	A	201531	
PHYS691	RESEARCH	31.00		-----1	
Total hours listed for credit:		64.00			

PhD in Physics degree plan with completed MS degree

Proposed course of study in partial fulfillment of the degree of PHD, Thesis, with a major in PHYS, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
MSEN655	MATERIALS DESIGN STUDIO	3.00		201811	
PHYS634	REL QUANTUM FLD THEORY	3.00		201811	
PHYS691	RESEARCH	58.00		-----1	
Total hours listed for credit:		64.00			

PhD in Applied Physics degree plan with no MS degree

Proposed course of study in partial fulfillment of the degree of PHD, Thesis, with a major in APHY, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
PHYS601	ANALYTICAL MECHANICS	3.00	B	201331	
PHYS603	ELECTROMAGNETIC THEORY	3.00	B	201411	
PHYS607	STATISTICAL MECHANICS	3.00	A	201511	
PHYS611	ELECTROMAGNETIC THEORY	3.00	A	201431	
PHYS617	PHYS OF SOLID STATE	3.00		201611	
PHYS624	QUANTUM MECHANICS	3.00	A	201511	
PHYS625	NUCLEAR PHYSICS	3.00	A	201431	
PHYS647	GRAVITATIONAL PHYSICS	3.00	A	201531	
PHYS666	SCI INSTRUMENT MAKING	3.00	B	201511	
PHYS681	SEMINAR	1.00	S	201331	
PHYS689	SPTP: QUANTUM MECHANICS I	3.00	B	201411	
PHYS689	SPTP: THEORETICAL PHYSICS I	3.00	A	201331	
PHYS691	RESEARCH	62.00		-----1	
Total hours listed for credit:		96.00			

PhD in Applied Physics degree plan with MS Degree

Proposed course of study in partial fulfillment of the degree of PHD, Thesis, with a major in APHY, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
PHYS685	DIRECTED STUDIES	3.00	B	201531	
PHYS691	RESEARCH	61.00		-----1	
Total hours listed for credit:		64.00			

PhD in Astronomy degree plan with completed MS degree*

Proposed course of study in partial fulfillment of the degree of PHD, Thesis, with a major in PHYS, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
ASTR681	SEMINAR	1.00	S	201511	
ASTR681	SEMINAR	1.00	S	201431	
ASTR685	DIRECTED STUDIES	9.00		201631	
ASTR691	RESEARCH	53.00		-----1	
Total hours listed for credit:		64.00			

Additional course work may be added to this proposed course of study by an Advisory Committee, if such additional work is needed to correct deficiencies in academic preparation.

* In general, PhD students in Astronomy are expected to earn a Master's Non-Thesis degree.

MS Non-Thesis Option in Physics degree plan

Proposed course of study in partial fulfillment of the degree of MS, Non-thesis, with a major in PHYS, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
PHYS601	ANALYTICAL MECHANICS	3.00		201811	
PHYS603	ELECTROMAGNETIC THEORY	3.00	B	201711	
PHYS606	QUANTUM MECHANICS	3.00	A	201631	
PHYS607	STATISTICAL MECHANICS	3.00		-----1	
PHYS611	ELECTROMAGNETIC THEORY	3.00		201731	
PHYS615	METH OF THRTCL PHYS I	3.00	A	201631	
PHYS617	PHYS OF SOLID STATE	3.00		201811	
PHYS624	QUANTUM MECHANICS	3.00	A	201711	
PHYS627	ELEM PARTICLE PHYS I	3.00	A	201711	
PHYS685	DIRECTED STUDIES	3.00	A	201631	
PHYS685	DIRECTED STUDIES	3.00		201811	
PHYS689	SUPERCONDUCTIVITY AND SUPERFLUIDITY	3.00		201731	
Total hours listed for credit:		36.00			

MS Non-Thesis Option in Astronomy degree plan

Proposed course of study in partial fulfillment of the degree of MS, Non-thesis, with a major in ASTR, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
ASTR601	EXTRAGALACTIC ASTRONOMY	3.00	A	201611	
ASTR602	ASTR OBSV TECH & INSTR	3.00	A	201631	
ASTR603	STELLAR ASTROPHYSICS	3.00	A	201531	
ASTR604	COSMOLOGY	3.00	A	201711	
ASTR605	GALACTIC ASTRONOMY	3.00		201811	
ASTR606	RADIATIVE TRANSFER	3.00		201731	
ASTR681	SEMINAR	1.00	S	201631	
ASTR681	SEMINAR	1.00	S	201611	
ASTR685	DIRECTED STUDIES	6.00	A	201621	
ASTR689	SPTP: ORDER-OF-MAGNITUDE ASTR	1.00	A	201711	
ASTR689	SPTP: STAT METHODS FOR ASTR	3.00	A	201531	
PHYS606	QUANTUM MECHANICS	3.00	B	201611	
PHYS615	METH OF THRTCL PHYS I	3.00	B	201531	
Total hours listed for credit:		36.00			

MS Thesis Option in Physics

Proposed course of study in partial fulfillment of the degree of MS, Thesis, with a major in PHYS, is submitted for the approval of the Office of Graduate Studies.

Course Number	Course Name	Credit Hours	Final Grade	Semester Taken	Transfer Institution
PHYS601	ANALYTICAL MECHANICS	3.00		----0	
PHYS603	ELECTROMAGNETIC THEORY	3.00		----0	
PHYS606	QUANTUM MECHANICS	4.00		----0	
PHYS607	STATISTICAL MECHANICS	4.00		----0	
PHYS611	ELECTROMAGNETIC THEORY	4.00		----0	
PHYS615	METH OF THRTCL PHYS I	4.00		----0	
PHYS631	QUANTUM THRY OF SOLIDS	3.00		----0	
PHYS634	REL QUANTUM FLD THEORY	3.00		----0	
PHYS689	SPECIAL TOPICS IN	3.00		200911	
PHYS691	RESEARCH	3.00		201021	
Total hours listed for credit:		34.00			

Additional course work may be added to this proposed course of study by an Advisory Committee, if such additional work is needed to correct deficiencies in academic preparation.

MS Thesis Option in Astronomy – for information, please contact the Graduate Faculty Advisor, Dr. Lucas Macri

XIV. Information for Graduate Students

Aggie Code of Honor

For many years Aggies have followed a Code of Honor, which is stated in this very simple verse:

An Aggie does not lie, cheat, or steal or tolerate those who do.

The Aggie Code of Honor is an effort to unify the aims of all Texas A&M men and women toward a high code of ethics and personal dignity. For most, living under this code will be no problem, as it asks nothing of a person that is beyond reason. It only calls for honesty and integrity, characteristics that Aggies have always exemplified.

The Aggie Code of Honor functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other. For more information go to the [Aggie Honor System Office](#) website.

Title IX – Sexual Discrimination, Sexual Harassment, Sexual Assault and Violence

Title IX of the Education Amendment of 1972 prohibits discrimination on the basis of sex in educational programs and activities at institutions that receive federal financial assistance.

Sexual harassment, including sexual violence, is a form of sex discrimination and is therefore prohibited under Title IX. Unwelcome sexual advances, requests for sexual favors, and other verbal, nonverbal or physical conduct of a sexual nature constitute sexual harassment when this conduct is so severe, persistent or pervasive that it explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work or educational performance, or creates an intimidating or hostile work or educational environment.

Texas A&M University is committed to providing an environment of academic study and employment free from harassment or discrimination to all segments of its community; its faculty, staff, students, guests and vendors; and will promptly address all complaints of discrimination, sexual harassment, and related retaliation in accordance with applicable federal and state laws. For more information, including reporting contacts, please visit <https://urc.tamu.edu/title-ix/>.

XV. Resources for Graduate Students

[Office of Graduate and Professional Studies \(OGAPS\) Home Page](#)

[OGAPS Calendars and Deadlines](#)

[OGAPS Forms](#)

[Graduate Catalog](#)

[Graduate and Professional Student Council](#)

[University Writing Center](#)

[TAMU Ombuds Officer](#)

[Career Center](#)

[TAMU Libraries](#)

[TAMU Student Rules](#)

[Request GAT or GANT position](#)

[Request GAR position](#)

XVI. Physics and Astronomy Graduate Advisor Contact Information

Joseph Ross (Faculty Advisor for Physics) ross@physics.tamu.edu	Office: Room 448 MPHY Phone: 979.845.3842
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Lucas Macri (Faculty Advisor for Astronomy) lmacri@tamu.edu	Office: Room M423 MIST Phone: 979.845.7362
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Sherree Kessler (Senior Academic Advisor) skessler@physics.tamu.edu	Office: Room 156 MPHY Phone: 979.458.5948
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RaéChel Superville (Academic Advisor II) rsuperville@physics.tamu.edu	Office: Room 154 MPHY Phone: 979.845.7738
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