DREXEL UNIVERSITY
Department of
Physics
College of Arts and Sciences

# GRADUATE PROGRAM HANDBOOK

Department of Physics – Drexel University

## GRADUATE PROGRAMS IN PHYSICS

This document describes the graduate programs in the Department of Physics and reflects current information, policies, and procedures for graduate students. This document supplements Graduate College policies.

AY 2025-26

Rev. 5/25

# Contents

**MASTER OF SCIENCE AND DOCTORAL DEGREE REQUIREMENTS** ..... 2

1. Orientation ..... 2
2. Eforms ..... 2
3. Course Requirements ..... 3

PhD Sample Plan of Study ..... 4

Sample Plan of Study (MS without Thesis) ..... 5

Sample Plan of Study (MS with Thesis) ..... 5

PhD Students Admitted with Post-Master's Status ..... 6

4. Course Registration ..... 6
5. Physics Graduate Course Offerings ..... 6

Every Year ..... 6

Even Years ..... 7

Odd Years ..... 7

6. Research Requirements ..... 7

6.1 Research Requirements (PhD Students) ..... 7

6.2 Research Requirements (MS Degree with Thesis Candidates) ..... 9

7. Candidacy Evaluation ..... 10

Progress Toward PhD Candidacy ..... 10

Candidacy Exam ..... 10

8. PhD Dissertation Proposal ..... 11
9. PhD Annual Reviews and Dissertation Committee Meetings ..... 12
10. PhD Program Milestones ..... 13

Year 1: ..... 13

Year 2: ..... 13

Year 3: ..... 13

Year 4+: ..... 13

11. Dissertation Defense ..... 14

Dissertation Format ..... 14

PhD Students Graduation Checklist: ..... 14

**DOCTORAL CANDIDATE ANNUAL ACTIVITIES REPORT FORM** ..... 16

## MASTER OF SCIENCE AND DOCTORAL DEGREE REQUIREMENTS

The Master of Science (MS) with or without thesis, and Doctor of Philosophy (PhD) degrees are conferred in recognition of breadth of scholarship. Candidates are required to complete a minimum of 45.0 credits of coursework while maintaining a minimum GPA of 3.0. Our department follows the graduate college policy definition of a non-passing grade, which is any letter grade below C. A graduate course with a non-passing grade does not count toward the required credits. Doctoral candidates need to demonstrate ability to investigate scientific problems independently and efficiently. MS candidates pursuing the MS degree with thesis need to demonstrate capacity to effectively use knowledge in physics to pursue a solution of a research problem. Advancement to doctoral candidacy or pursuit of the MS degree with thesis also requires no more than two core course grades below B-. MS students who wish to join our PhD program need to complete their application and submit it through the graduate admissions office during the annual admissions cycle.

Doctoral candidates must demonstrate the ability to perform original research, pass the oral qualifying exam, write and defend a PhD thesis proposal, complete the proposed research, write the PhD thesis describing their research, and defend the PhD thesis in an oral examination. The usual schedule for physics graduate students includes an initial two-years of course work, research training, and completion of the candidacy exam, followed by three or more years of dissertation research (here and throughout, "dissertation" and PhD "thesis" are used interchangeably). It is required by the university that a graduate student completes the PhD degree within seven years after enrollment. The department expects that most PhD students will complete the PhD in five years.

### 1. Orientation

All entering full-time students are required to attend the orientation program. This program is offered during the two weeks prior to the start of the fall quarter and includes activities organized by both the Department of Physics and the Graduate College. The orientation program includes a scientific computing workshop that introduces programming tools to be used in graduate courses and research, research talks by faculty and current students, discussion of departmental policies, and a session on responsibilities of teaching assistants. Orientation is an excellent opportunity to meet fellow students, faculty, and staff and become familiar with campus resources. By the end of this period, students will be on their way to tackling computing problems and have an idea of the range of research possibilities in the department. The program also includes activities and informal social events with current graduate students, concluding with a camping trip on the final weekend.

### 2. Eforms

Eforms is an electronic web-based system used to track doctoral student and MS thesis progress. It allows students to track their progress and faculty approvals through a series of tabs. Each tab

has a unique function and requires approval from certain constituents. Under each tab, you will find one or more navy blue Information boxes with a summary of instructions on how to use the tab and proceed. Much of those instructions can also be found in the Eforms Guidebook.

The tabs are in a sequential order that pertains to the progressive steps taken in the PhD and MS Thesis programs. Students begin with the Supervisor Appointment tab and during first year are expected to complete both the Supervisor Appointment and Plan of Study tabs. Note that tabs are locked (unavailable) until the prior necessary steps/tabs have been completed and all approvals received. It is the student's responsibility to ensure their Eform approvals and tabs are up-to-date and reflective of progress made thus far in the program.

To access Eforms, go to: https://gradcollege.irt.drexel.edu/
You must either be oncampus or logged in using Drexel's Cisco VPN.

## 3. Course Requirements

Core courses cover topics of relevance to all physics sub-disciplines, including Mathematical Physics (PHYS 501), Dynamics I (PHYS 506), Electromagnetic Theory (PHYS 511 & PHYS 512), Quantum Mechanics (PHYS 516 & PHYS 517), and Statistical Mechanics (PHYS 521 & PHYS 522). All core courses are required for MS and PhD students alike.

A minimum 50% of the grade assigned to the core courses will be based on comprehensive in-class final and/or midterm exams covering the topics described in the course catalog. PhD students and the MS students who want to pursue the MS with thesis should have no more than two core course grades below B-.

Graduate students should complete the following 8 core graduate level courses and 12 credits of elective coursework within the first 2 years. Although not required, students pursuing the MS degree without thesis may complete one 3-credit research course (PHYS 997). MS students pursuing the MS degree with thesis should successfully complete at least one 3-credit research course (PHYS 997) in their first year and the 9-credit PHYS 898 (MS Thesis) in their second year. For those pursuing PhD or MS degree with thesis, two of the four topics courses should be outside the student's research specialty.

| **Core Courses** | | **Credits** |
|---|---|---|
| PHYS 501 | Mathematical Physics I | 3.0 |
| PHYS 506 | Dynamics I | 3.0 |
| PHYS 511 | Electromagnetic Theory I | 3.0 |
| PHYS 512 | Electromagnetic Theory II | 3.0 |
| PHYS 516 | Quantum Mechanics I | 3.0 |
| PHYS 517 | Quantum Mechanics II | 3.0 |
| PHYS 521 | Statistical Mechanics I | 3.0 |
| PHYS 522 | Statistical Mechanics II | 3.0 |
| **Research** | | |

| | | |
|---|---|---|
| PHYS 997 | Research | 1-9.0 |
| **Topics Courses** | | |
| PHYS 531 | Galactic Astrophysics | 3.0 |
| PHYS 532 | Cosmology | 3.0 |
| PHYS 540 | Big Data Physics | 3.0 |
| PHYS 553 | Nanoscience | 3.0 |
| PHYS 561 | Biophysics | 3.0 |
| PHYS 562 | Computational Biophysics | 3.0 |
| PHYS 576 | Particle Physics | 3.0 |
| PHYS 626 | Solid State Physics I | 3.0 |
| PHYS 627 | Solid State Physics II | 3.0 |
| PHYS 631 | Relativity Theory I | 3.0 |
| PHYS 679 | The Standard Model | 3.0 |
| PHYS T580 | Special Topics in Physics | 3.0 |
| PHYS T780 | Special Topics in Physics | 3.0 |
| **Dissertation Course** | | |
| PHYS 898 | MS Thesis | 3.0 |
| PHYS 998 | PhD Dissertation | 1-9.0 |

Topics courses are an introduction to current topics of experimental and theoretical interest. Doctoral candidates who wish to take additional topics courses should register for fewer credits of PHYS 998. The total number of tuition credits per quarter is fixed.

Students supported by fellowships (TF or RF) receive tuition remission for required coursework only and must obtain authorization in advance from the Department Head or Associate Department Head for Graduate Studies if they wish to take courses outside the Department. Students will be financially responsible for any unapproved tuition credits.

## PhD Sample Plan of Study

| **First year** | | | |
|---|---|---|---|
| **Fall** *(9 credits)* | **Winter** *(9 credits)* | **Spring** *(9 credits)* | **Summer** *(9 credits)* |
| PHYS 501 | PHYS 516 | PHYS 517 | PHYS 997 Research |
| PHYS 506 | PHYS 511 (or PHYS 521) | PHYS 512 (or PHYS 522) | |
| Topics Course | Topics Course | PHYS 997 Research* | |
| **Second year** | | | |
| **Fall** *(9 credits)* | **Winter** *(9 credits)* | **Spring** *(9 credits)* | **Summer** *(9 credits)* |
| Topics Course* | PHYS 521 (or PHYS 511) | PHYS 522 (or PHYS 512) | PHYS 998 Dissertation Research |
| PHYS 997 Research | Topics Course | PHYS 997 Research | |
| | PHYS 997 Research | | |

** 3.0 credits of PHYS 997: Research must be taken by Spring of the first year. A spring topics course may be elected only if PHYS 997 is taken earlier in that year.*

The schedule of courses is listed in section 4. Physics Graduate Course Offerings of this handbook.

Students should plan which topic courses they will take during the academic year. It is allowed to substitute 3 credits of PHYS 997 for a topic course in a quarter of the student's second year studies.

After advancing to doctoral candidacy and completing the Examination Committee and Candidacy Exams tabs Eforms (typically after spring of the second year), students should register for PHYS 998 Dissertation Research in all quarters in which they are on campus (note that international students must be continuously registered to maintain visa status). Students are limited to a maximum of 9 dissertation credits per quarter.

Important: Students should enter the right amount of credits when registering for PHYS 997 and PHYS 998 (default is 1 credit).

### Sample Plan of Study (MS without Thesis)

| **First year** | | | |
|---|---|---|---|
| **Fall** *(9 credits)* | **Winter** *(9 credits)* | **Spring** *(9 credits)* | **Summer** |
| PHYS 501 | PHYS 516 | PHYS 517 | |
| PHYS 506 | PHYS 511 (or PHYS 521) | PHYS 512 (or PHYS 522) | |
| Topics Course | Topics Course | Topics Course | |
| **Second year** | | | |
| **Fall** *(6 credits)* | **Winter** *(6 credits)* | **Spring** *(6 credits)* | **Summer** |
| Topics Courses | PHYS 521 (or PHYS 511) | PHYS 522 (or PHYS 512) | |
| | Topics Course | Topics Course | |

### Sample Plan of Study (MS with Thesis)

| **First year** | | | |
|---|---|---|---|
| **Fall** *(9 credits)* | **Winter** *(9 credits)* | **Spring** *(9 credits)* | **Summer** |
| PHYS 501 | PHYS 516 | PHYS 517 | |
| PHYS 506 | PHYS 511 (or PHYS 521) | PHYS 512 (or PHYS 522) | |
| Topics Course | Topics Course | PHYS 997 Research | |
| **Second year** | | | |
| **Fall** *(6 credits)* | **Winter** *(6 credits)* | **Spring** *(6 credits)* | **Summer** |
| Topics Courses | PHYS 521 (or PHYS 511) | PHYS 522 (or PHYS 512) | |
| PHYS 898 | PHYS 898 | PHYS 898 | |

The schedule of courses is listed in section 4. Physics Graduate Course Offerings of this handbook.

### PhD Students Admitted with Post-Master's Status

Students who are admitted for PhD study with "post-masters" status must take 15 credits of graduate coursework with a minimum GPA of 3.0 to become doctoral candidates. Courses are to be chosen in consultation with the Graduate Academic Committee. Post-master's students are expected to pass the candidacy exam by the end of the spring quarter of their first year of study. To be prepared for the candidacy exam, post-master's students should begin research as soon as possible (see section 5.1. Research Requirements).

## 4. Course Registration

All full-time students must register online via DrexelOne in each term in which they are active for a total of 9 credits of required courses. Make sure that you register for the correct courses and number of credits. Failure to follow instructions may result in a financial hold that will (a) cause you to be billed, (b) prevent you from registering in the future, (c) damage your visa status, (d) cause you to lose your health insurance, (e) cause your student loan to be called in.

Here are the steps to remember when registering for courses:

- Student Financial Obligation (SFO) Statement – Reading and completing the SFO is done via DrexelOne once time tickets have opened for the following term. You will be prompted to complete the SFO before you are allowed to register. If you opt to disagree with the SFO, a hold will be placed on your account preventing registering. Students graduating, going on vacation or completing a leave of absence or university withdrawal have the option to indicate "No Interest" to the SFO for the term they will not be registering for.
- Complete Your Course Registration – Student Guide: New Registration Interface [PDF] – Download the guide as a reference for navigating the new registration interface.
- Confirm Your Enrollment – Make sure you confirm your enrollment each term you are scheduled for courses. Learn more about the process.

## 5. Physics Graduate Course Offerings

Courses are offered in the following terms. For a detailed list of course descriptions, please visit Drexel's catalog.

### Every Year

| Fall | Winter | Spring |
|---|---|---|
| PHYS 501 Math Physics I | PHYS 516 Quantum Mech I | PHYS 517 Quantum Mech II |
| PHYS 506 Dynamics I | PHYS 997 Research | PHYS 997 Research |
| PHYS 997 Research | PHYS 998 PhD Dissertation | PHYS 998 PhD Dissertation |

| | | |
|---|---|---|
| PHYS 998 PhD Dissertation | | |

### Even Years

| Fall | Winter | Spring |
|---|---|---|
| PHYS 626 Solid State Phys I | PHYS 511 Electrom Theo I | PHYS 512 Electrom Theo II |
| PHYS 540 Big Data Physics | PHYS 553 Nanoscience | PHYS 627 Solid State Phys II |
| | PHYS 576 Particle Physics | PHYS 631 Relativity Theory I |

### Odd Years

| Fall | Winter | Spring |
|---|---|---|
| PHYS 531 Galactic Astrophys | PHYS 521 Statistical Mech I | PHYS 522 Statistical Mech II |
| PHYS 561 Biophysics | PHYS 532 Cosmology | PHYS 679 Standard Model |
| | PHYS 562 Comp Biophysics | |

## 6. Research Requirements

### 6.1 Research Requirements (PhD Students)

Students begin research in the spring and summer terms of their first year. The spring project culminates in a poster presented to the department. A two-page proposal for their summer research is also due at the end of the spring term. At the end of the summer, students are required to submit an in-depth written report and give an oral presentation of their summer project. Research during the second year is toward the candidacy exam. Details of these research requirements are as follows.

| New Entering Students | Requirement |
|---|---|
| Spring 1st year | Poster |
| | Two-page proposal for summer research |
| Summer 1st year | Written Report (10-15 pages) |
| | Oral Presentation |
| Spring 2nd year | Candidacy Exam (written report and oral exam) |

Research requirements are divided into three parts. Note that a student may complete these Research Requirements on different topics and/or with different research advisors.

*Research 1.* The first part of the research requirements consists of carrying out a small research project during their first-year spring term. Students will be required to present a poster at the end of the spring term highlighting their procedure, results, and conclusions of this short project. To introduce students to common professional skills, the format of the poster will follow standard formatting normally used in scientific conferences, including a section

detailing "future research plans" that could naturally extend their research. In addition to the poster, students will also be required to write a two-page proposal for their planned summer research. That proposal must be approved in writing by the research advisor. The grade for the spring PHYS 997 course will be assigned by the faculty research advisor.

*Research 2.* The second part of the research requirements will be carried out during the summer of the student's first year and will consist of a more in-depth investigation of the topic examined during the spring term (and outlined in the spring research proposal) or a different one as determined by the faculty advisor. This investigation will result in a written report of 10-15 pages with content and format following professional practice, but generally including three aspects: review of the problem area, formulation and solution of the problem, and suggestions for further research.

- Student Name
- Title
- Advisor's Name
- Abstract
- Introduction (Motivation, Background, Literature Review)
- Progress Report: Description of your research with conclusions (if applicable)
- Future Plans
- References

In addition, students will be required to give an oral presentation to the department. The oral presentation will consist of a brief presentation of background information that puts the problem in context within the field, the approach used to address the problem, and conclusions supported by the data. The oral presentation is expected to last 20 to 30 minutes. Emphasis will be given to scheduling these presentations during the new graduate student orientation period. The grade for the summer PHYS 997 course will be assigned by the faculty research advisor using grading rubric similar to that currently used for the Qualifying Exam, presented below.

*Research 3.* The third part of the research requirements will consist of the Candidacy Exam described below.

*Post-masters* students joining the department will be exempt from the Research 1 and 2 requirements listed above. However, they will have to prepare a two-page progress report and proposal of their 2nd year research. The progress report and proposal will be due by the end of the fall term of the first year and will be evaluated for content and appropriateness by the Graduate Academic Committee in conjunction with their faculty advisor.

| Entering Post-Masters Students | Requirement |
|---|---|
| Fall 1st year | Two-page progress report and proposal for 2nd year research |
| Spring 1st year | Candidacy Exam (written report and oral exam) |

## 6.2 Research Requirements (MS Degree with Thesis Candidates)

Research requirements are divided into two parts, which need to be completed with the same research advisor.

First, MS students who want to be considered for the MS degree with thesis should carry out a research project during their first-year spring term. At the end of the spring term, students will be required to write a two-page proposal for their planned future research. This proposal must be approved in writing by the research advisor. The grade for the spring PHYS 997 course will be assigned by the faculty research advisor. Upon completion of the spring PHYS 997, the student should ask the faculty research advisor to provide a letter of support with a commitment to serve as the student's MS thesis advisor. The research proposal with the letter of support should be submitted to the Graduate Academic Committee no later than the last day of class in the spring quarter. The Graduate Academic Committee will seek to review such proposals by the end of week 1 of the summer quarter. If approved, then the MS student may pursue the MS degree with thesis. The MS Thesis student will then begin using Eforms to track and record their thesis approvals.

Second, the MS students approved for the MS degree with thesis need to complete at least 9 credits of the PHYS 898 course, which will culminate in the MS thesis defense with requirements that match the oral candidacy exam of the PhD candidates. The MS thesis should be based on original research performed by the student. The format of your thesis must follow the guidelines found in the Thesis Manual [PDF] maintained by the Graduate College, in addition to any guidelines set by your academic department.

The thesis should be submitted to the MS thesis committee and the Associate Head for Graduate Studies at least one week prior to the defense, which consists of a public seminar followed by an oral exam conducted by a faculty committee. The time, date, and location of the talk should be entered into Eforms on the Defense tab and announced by the student by e-mail and by posting a notice in the Department's Main Office one week before the defense.

The subject matter will be at the discretion of the student with approval of a faculty research advisor. The written thesis will include three aspects: review of the problem area; formulation and solution of a small problem; suggestions for further research. The oral examination by five faculty will follow the public seminar. The defense will last about one hour and will include material related to the research report. After the thesis defense, the Chair of the thesis committee must enter the defense decision on the Defense tab within 48hrs. Once the Defense tab is complete, the student will use the Submit Thesis tab to receive final approvals on the thesis (after any revisions) and to submit the final thesis document to Proquest.

The purpose of the MS thesis defense is to clarify material in the MS thesis and to demonstrate adequate scientific oral communication skills. The student is advised to schedule no less than two hours for completion of the public seminar and closed-door oral examination. The outcome of the examination is either a passing or a failing grade. In the case of a failing grade, the student may retake the MS thesis defense once more by the end of the following term.

## 7. Candidacy Evaluation

### Progress Toward PhD Candidacy

At the end of each term prior to achieving PhD candidacy, the graduate academic committee will evaluate the student's progress. The factors considered in each evaluation are grades of graduate coursework to date, Research 1 grade, and Research 2 grade. Based on this evaluation, the graduate academic committee will make a recommendation regarding the continued PhD candidacy of the student, with the following possible outcomes: Satisfactory, Probationary, or Terminal MS.

Satisfactory status allows the student to continue their candidacy and plan of study.

Probationary status will be recommended if a PhD student receives (i) two passing grades below B- (C+ or C) in core courses or (ii) a single non-passing grade (C-, D, F, or W) in a core course, in which case the student will be offered one chance to improve this grade. Probationary status allows continued candidacy subject to meeting additional requirements put forth by the graduate academic committee to address shortcomings in the student's academic and/or research record.

Terminal MS status will be recommended if a PhD student with probationary status does not meet the requirements put forth by the graduate academic committee. Terminal MS status will also be recommended if a PhD student receives (i) two non-passing grades in core courses or (ii) three grades below B- in core courses. Terminal MS status will result in termination of PhD status and TA support at the end of the academic year.

A PhD student is eligible for a one-time appeal against the graduate academic committee recommendation through a letter addressing the rationale for the appeal, which needs to be submitted to the committee chair within a week after the recommendation date.

### Candidacy Exam

The oral candidacy exam is based on original research performed by the student. A written report should be submitted to the exam committee and the Associate Head for Graduate Studies at least one week prior to the exam, which consist of a public seminar followed by an oral exam conducted by a faculty committee. The time, date, and location of the talk should be entered on the Candidacy Exam tab and announced by the student by e-mail and by posting a notice in the Department's Main Office one week before the exam. The written report will be comparable to a term research project report and will be limited to 10 to 20 pages including tables, charts, and bibliography. Appendices, including detailed derivations, technical details, data and computer codes, will be available separately upon request. The subject matter will be at the discretion of the student with approval of a supervisor. The written report will include three aspects: review of the problem area; formulation and solution of a small problem; suggestions for further research. The oral examination by five faculty will follow the public seminar. This exam will last about one hour and will include material related to the research report. The purpose of the oral exam is to clarify material in the research report and to insure adequate scientific oral communication skills. The

student is advised to schedule no less than two hours for completion of the public seminar and closed-door oral examination.

The student will take this exam after successful completion of at least one year of graduate work at Drexel and prior to the end of the spring quarter of the second year of doctoral study (post-masters students will do so in their first year). The purposes of the candidacy exam are to determine the student's ability to begin thesis-level research; to ascertain his or her understanding of the fundamental concepts and ideas pertinent to the field of endeavor; and to detect any deficiencies of background that may need further attention. The committee must consist of no less than five members, at least three of whom must be currently tenured or tenure-track Drexel faculty members. A minimum of two of the committee members must be from outside the student's primary specialization area. At least one of the committee members must be from outside the student's department, preferably from outside the university. Upon completion of the exam, the committee chair will complete the Doctoral Candidacy Examination Report in the EForms system and will enter the result. All members of the committee shall enter comments. The outcome of the examination is either a passing or a failing grade. Only if it is deemed appropriate by the Associate Department Head of Graduate Studies may the exam be attempted a second time (which may be no later than the Summer of the second year).

## 8. PhD Dissertation Proposal

a. Before the end of the Fall Quarter of the third year of graduate study, a post-qualified student must present a thesis proposal to a Dissertation Committee, comprised of their supervisor and four other faculty members, including at least two members from outside the student's research specialty and one external to the department (following rules set by Graduate College).

b. The dissertation proposal will include both a written proposal and an oral presentation; the written proposal must be given to the dissertation committee at least one week before the oral presentation.

c. Prior to the proposal defense, the doctoral candidate should review the Dissertation Committee membership in the EForms system. If it is correct, the student will need to enter the proposal title, date, time, and location in the EForms system.

d. The written proposal should be 15 pages in length or longer, including figures and references. Required sections of the proposal are as follows.

   i) Introduction: Motivation for the proposed research
   ii) Literature review
   iii) Statement of the project
   iv) Methods of attack: Theoretical background, experimental setup, and/or computational methods
   v) Preliminary results and discussion (Possible outcomes and their significance, next steps)

vi) Timeline and Milestones: A plan to complete the thesis within 5 years after matriculation, including measurable milestones such as paper submissions. Changes to this timeline (including extensions of the timeline beyond the fifth year) should be discussed and revised in writing with approval of the Dissertation Committee.

e. The oral presentation should be about 30 minutes, followed by questions from the committee.

f. After closed-door discussion, the committee decides whether the dissertation proposal and presentation are satisfactory or not and a pass/fail grade will be given.

g. The committee can also make suggestions to the proposal and suggest improvements to the written report or the oral presentation.

h. Upon completion of the proposal defense, the committee chair shall enter the committee's decision. The chair may enter a summary of the recommendations and ask each member to enter their comments/feedback in the EForms system.

i. For students who fail the dissertation proposal for the first time, they must pass the thesis proposal presentation by the end of the following quarter to continue in the PhD program.

## 9. PhD Annual Reviews and Dissertation Committee Meetings

In the third year, the student will present a dissertation proposal to their Dissertation Advisory Committee as described above.

In subsequent years, the student will present their dissertation progress on an annual basis to their Dissertation Committee. Composition of the committee is specified by Graduate College policy, as detailed above (7.a). The student is advised to schedule one and a half hours for each meeting.

The annual review will assist students in the timely completion of their degree by allowing appropriate diagnosis of deficiencies, clarification of expectations for research performance, and identification of opportunities for improvement. Committee feedback/comments should be documented in the EForms system. Annual Reviews should be completed within 12 months of the previous one.

One week before the annual review meeting, students are required to submit the Doctoral Candidate Annual Activities Report Form to each member of their Dissertation Committee. This report shall contain a summary of professional activities and research progress during the year (the Doctoral Candidate Annual Activities Report Form is included at the end of this handbook).

The meeting will consist of a succinct presentation from the student, not to exceed 30 minutes, that briefly summarizes relevant background and previous progress and present research progress carried out during the last year. It is imperative to note that students are not to repeat material from the previous year except to use as background and to put the new research into context. Following the student's presentation, the student will step outside of the room and the Dissertation Committee will hold a closed-door discussion to assess progress and future direction

of the research. At the conclusion of the discussion, the Dissertation Committee will evaluate the progress following the rubric provided by the Graduate College and the department. Possible outcomes are that the student: (i) is allowed to continue research, (ii) is conditionally allowed to continue research (provided there is a semi-annual meeting), or (iii) is found not to have made satisfactory progress in their research project.

## 10. PhD Program Milestones

### Year 1:

- Complete 6 core courses.
- Complete 3 credits of Research by the Spring and 2 topic courses.
- Complete the Supervisor Appointment tab by the end of Fall term.
- Complete the Plan of Study tab by the end of Winter term.
- In the Spring, present a research poster and a two-page proposal for planned summer research.
- At the end of the Summer, prepare an in-depth written research report along with an oral presentation to a general audience.

### Year 2:

- Complete remaining 2 core courses.
- Complete 12 Research credits and 2 topic courses.
- Continue research.
- Pass candidacy exam.
- Complete Examination Committee and Candidacy Exam tabs in Efoms.

### Year 3:

- Present a written dissertation proposal and an oral presentation which must be approved by the Dissertation Committee.
- Complete the Advisory Committee and Proposal Tabs in Eforms.
- Present research progress report to the Dissertation Committee (Annual Reviews in EForms). Submit the Doctoral Candidate Annual Activities Report Form to all committee members at least a week before the annual review meeting.

### Year 4+:

- Each year, present research progress report to the Dissertation Committee (Annual Reviews in EForms). Submit the Doctoral Candidate Annual Activities Report Form to all committee members at least a week before the annual review meeting.
- Complete thesis research.
- Write and defend thesis.
- Complete the Dissertation Defense and Submit Dissertation tabs in Eforms.

## 11. Dissertation Defense

This examination constitutes an open defense of the dissertation. The student should check that the Dissertation Committee in the EForms system is up to date. This form must be completed at least one month prior to the defense. The Committee must consist of at least five members, three or more of whom must be currently tenured or tenure-track Drexel faculty members. Two members at minimum must be from outside the student's major area and at least one member from outside the student's department, preferably from outside the university.

The Candidate is reminded that a printed copy of the final dissertation must be distributed to all Committee members and the Associate Department Head of Graduate Studies at least two weeks before the scheduled exam to allow sufficient time for a thorough review and analysis. The title, abstract, time, date, and location of the oral defense announcement should be added to the Defense tab in Eforms and distributed by the student by email and by posting a notice in the Department's Main Office one week before the exam.

Results of the defense are reported to the Department and the Graduate College by the Committee Chair via the EForms system. All committee members must agree with the recommendation. This step should be completed by the Committee Chair within 48 hours of the exam. Students and the Committee Chair should follow the guidelines for thesis submission and further approvals as instructed in the Graduate College EForms Guide. The Committee Chair is responsible for making sure that all signatures are obtained. In the case of a disagreement within the Committee, the Chair should consult with the Dean of the Graduate College. The entire committee should approve your final thesis in the EForms before you make the final submission to ProQuest.

### Dissertation Format

All doctoral dissertations, in addition to originality and scholarly content, must conform to University format and submission requirements. The doctoral student and supervising professor are responsible for conforming to the university format requirements.

### PhD Students Graduation Checklist:

- File an application for degree via DrexelOne by the appropriate deadline for the term in which you intend to graduate.
- The following steps must be completed in the EForms system:
    - Verify that your Dissertation Committee is correct. If it needs to be updated, please go to the Dissertation Committee tab, and select Update.

- A month in advance of your final Oral Defense, enter your Dissertation information, and select Defense Notification. Notifications will then be sent to the entire committee.
- Upon completion of your Dissertation Defense, all Committee members must agree with the chair's recommendation. Once the decisions of all Committee members are in the form, click Request Approvals.
- When you have the final version of your thesis, select the Submit Thesis tab, enter the title and date, click Save and Notification. Each committee member, including the chair, will receive a notification.
- After receiving the final approval from all committee members, you may upload your dissertation to ProQuest. The library will be able to access your Dissertation Approval Form to add as the first page of your dissertation.
- Upload the ProQuest receipt in the Supporting Documents' tab.
- In the Submit Thesis tab select Yes in the ProQuest receipt field and click Save.
- Complete the Survey of Earned Doctorates and the Drexel PhD/Doctoral Exit Survey, and upload confirmation of the surveys' completion in the "Supporting Documents" tab.
- Once all steps have been completed, click Request Approvals (Student, Supervisor, DGS, and Graduate College).

****THIS REPORT MUST BE SUBMITTED WITH ADVISOR'S COMMENTS AND SIGNATURE AT LEAST ONE WEEK BEFORE THE ANNUAL REVIEW MEETING. ANNUAL REVIEWS MUST BE COMPLETED WITHIN 12 MONTHS OF YOUR PREVIOUS ONE. ****

## DOCTORAL CANDIDATE ANNUAL ACTIVITIES REPORT FORM

Name: Entry Year in the Program:

---

## Research:

- **If you are a Third-Year Student**
  When did you submit your written thesis proposal? (Date):
  When did you make your oral presentation to your Committee (Date):

- **Thesis Advisor:**

- **Title of project:**

- **Dissertation Advisory Committee:**
  Chair:
  Member (1):
  Member (2):
  Member (3):
  Member (4):

- **Date of your last formal meeting with four or more members of your committee?**

- **Outcome of the meeting: (satisfactory/semiannual review/non-satisfactory):**

- **Status of your current research and goals:**
  Describe what you have accomplished in your thesis research during the previous academic year. You may give bullet points with supporting detail. Lack of detail in this section will be interpreted as lack of progress.
  Describe your research goals for the coming academic year. Lack of detail in this section will be interpreted as lack of planning:

- **Publications.** List articles/chapters published or in press. Be sure to note status (i.e., submitted, working on revisions, accepted, published) and type (peer-reviewed article, non-reviewed article, paper in conference proceedings, etc.).

- **Conference Activities**. List all conference activities. Please specify, for each, whether it is a paper presentation, presentation w/o paper, workshop, poster session, etc. and whether it was presented already, accepted for presentation, or submitted for presentation. Include date, title of paper/presentation, name of conference, and location of conference.

- **List other research and other scholarly activities that do not fit into the categories listed above** (e.g., manuscripts in progress, colloquia on your research, graduate student research, etc.)

- **Were you supported at any time as a RF?** If so, give the advisor's name and during which quarters you were/are supported. If you know the source of this support, please describe.

- **Please describe any grants or fellowships for which you applied.** Indicate the funding agency, amount of grant, and whether you received the award.

- **List any honors that you received** (not grants).

- **When do you expect to complete and defend your dissertation?** (You must estimate a Month/Year.)

## Teaching

- For which courses have you been a TF this year? Include term/course/component (e.g. Fall: PHYS 123 Recitation) and any comments you would like to add.

- End of Term Course Evaluations: Please comment on the results on each course and what you have done to address any issues. If similar comments repeated on more than one term/course, develop an improvement plan.

## Outreach

List all outreach activities in which you have participated.

**E-Signature:**

**Date:**

---

**ADVISOR'S COMMENTS**

**Please comment on the student's progress. Satisfactory progress is required for renewal of graduate appointments.**

Does the student have realistic objectives and timetable for completing the degree?

Please provide specific comments on the progress the student has made during the past year.

If the student is not making adequate progress, please explain why.

**E-Signature:**

**Date:**