2011-2012

Guide for Graduate Students

University of Notre Dame
College of Science
Department of Physics
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Physics Graduate Program

About the Graduate Program

The physics graduate program is research oriented, with the students actively involved in both experimental and theoretical studies in a wide range of areas: astrophysics, atomic physics, biophysics, condensed matter physics, high energy physics, and nuclear physics. Currently graduate students are searching for answers to questions such as: What is this mysterious dark energy that pervades the universe? What is dark matter? Can it be made in the lab? Can we understand the birth or death of stars at the nuclear level? Can we create new materials with unexpected, and potentially useful, properties? How can physics help us to understand more about the way the brain works or the way diseases spread? What is the origin of mass? A more complete description of physics research activities can be found on the department web site.

The Physics Community. The Notre Dame Department of Physics consists of 38 teaching and research faculty, 10 research faculty, ~20 post-doctoral scholars, ~100 graduate students, and ~100 undergraduate physics majors. In addition, distinguished visiting scholars rotate through the department, delivering weekly seminars and colloquia or collaborating and conducting experiments within the research facilities of Nieuwland Science Hall. In addition to the standard laboratories associated with each experimentalist on the faculty, local facilities and centers include the Nuclear Structure Laboratory, the Joint Institute for Nuclear Astrophysics, the Institute for Theoretical Science, and the Interdisciplinary Center for Network Science & Applications. Notre Dame physics graduate students work at the Large Binocular Telescope at Mount Graham (AZ); Compact Muon Solenoid, CERN (Switzerland), the Advanced Photon Source at Argonne National Laboratory (IL), the Spallation Neutron Source at Oak Ridge National Laboratory (TN), at Los Alamos National Laboratory (NM), as well as travel to perform experiments at facilities in Canada, France, Germany, Belgium, Italy, Switzerland, Japan, Korea, and South Africa.

Funding in the department. Admitted students typically receive a stipend plus full tuition support through a combination of teaching and research assistantships for a period of at least five years. They are also encouraged to compete for internal and external fellowships.

Research is supported by the National Science Foundation, the Department of Energy, NASA, the Alfred P. Sloan Foundation, the Research Corporation for Science Advancement, as well as many other agencies and foundations. Excitement and growth are also evident throughout the research endeavors of the entire university, with Notre Dame’s annual research funding topping the $100-million mark for the first time during the 2009 fiscal year.

The Curriculum. The core curriculum of eight courses is thorough and broad enough to allow new graduate students to fill in gaps in their undergraduate background, yet also flexible enough to allow advanced students to transfer graduate credit or “test out” of entry-level courses. Six introductory research courses are taught in the first year, giving breadth to the program. Each research area offers one or more advanced course for those entering the field, with some groups rotating options for their students on an every other year basis.
Physics Graduates. Since 1944, over 500 students have earned Ph.D.s in physics from Notre Dame. The first position taken by a typical graduate of the program is typically a post-doctoral fellowship, with others going directly to teaching and research positions or positions in industry. Recent graduates entering industry have taken positions in software engineering, aeronautical engineering, medical physics, financial analysis, insurance, patent law, and consulting. Several physics graduates have been CEOs, with one being a former CEO of Compaq Computer. Notre Dame graduates can also be found in research scientist positions in national laboratories such as Argonne, Fermi Lab, Los Alamos, Oak Ridge, and NASA. Many graduates of the program have eventually taken tenure-track positions at colleges or universities in the United States or abroad. Some have become physics department chairs and one is now the Dean of Engineering at the University of Washington.

This Guide
The purpose of this guide is to explain the rules and procedures of the Department of Physics as they pertain to physics graduate students. As specified by the Graduate School, all graduate programs are to have a guide that sets out the basic policies of the program and also provides guidance on the department’s expectations. It is maintained by the Director of Graduate Studies (DGS) for the department. The DGS is the central administrator of the graduate program, being the point of contact for the department, college, and the Graduate School. The DGS works collaboratively with the department in fulfilling the responsibilities expected of a graduate program by the Graduate School.

The organization of this guide is as follows. A variety of topics, from general to specific, are addressed under section headings. Part I summarizes the basic course requirements of the program. Part II describes academic policies and procedures. In Part III, basic policies are discussed, starting with financial support. Part IV describes the research portion of the program, including research advisors, research committees, required examinations, and the Ph.D. dissertation.

Every attempt has been made to have this guide as accurate and up-to-date as possible. It is updated yearly, with new versions released at the start of the fall semester. While every attempt is made to make this information error free, in the case conflicting information is found, original Graduate School sources take precedence over this graduate guide. Questions on specific items may be brought to the DGS. In the event that errors are discovered in this guide, corrections to this document will be brought to the attention of the department via the department’s list-servs.
Part I
The Program
**Summary of Ph.D. Requirements**

**Course Work and Credit Hours.** The Department of Physics requires 33 credit hours of course work for the Ph.D. degree. These credits are met through the core course requirement, the breadth requirement, and the research-area course. Some of the requirements may be met by transfer of credit from another institution or waiver of the requirement by the department (see Appendix A).

**Foreign Language Requirement.** The Department of Physics does not have a foreign language requirement for the Ph.D. degree.

**Residency.** The minimum residence requirement for the Ph.D. degree is full-time status for four consecutive semesters (may include summer session).

**Degree Eligibility.** Students must fulfill all doctoral requirements, including the dissertation and its defense, within eight years from the time of matriculation. Failure to complete any of the Graduate School or departmental requirements within the prescribed period may result in forfeiture of the student’s degree eligibility.

**Required Examinations.** There are three required examinations for Ph.D. students. First, students must pass the department’s qualifying examination before the end of the second academic year. Second, students must pass the written and oral candidacy examinations by the end of the fourth academic year. Next, Ph.D. students are expected to defend their dissertations by the end of the sixth academic year. Finally, it is Graduate School policy that all students must fulfill all doctoral requirements, including the dissertation and its defense, within eight years from the time of matriculation.
Summary of Master’s Requirements

Introduction. The graduate program in the Physics Department is research-oriented. For that reason the department does not normally accept students who plan to terminate their studies with a master’s degree. Every beginning graduate student is considered a potential Ph.D. candidate who will complete a dissertation based on original research conducted under the direction of a faculty advisor. Thus, there is no option in the Physics Department for a research master’s degree. Master’s degrees are earned instead through the combination of course work and the master’s comprehensive examination.

Course Work and Credit Hours. The Department of Physics requires 30 credit hours of course work for the master’s degree. These credits are chosen from courses taken as part of the Ph.D. curriculum. Students in a research program may include up to 6 credit hours in research courses in their master’s program.

Foreign Language Requirement. The Department of Physics does not have a foreign language requirement for the master’s degree.

Residency. The minimum residency requirement for the master’s degree is registration in full-time status for one semester during the academic year or for one summer session.

Degree Eligibility. Failure to complete all requirements for the master’s degree within five years results in forfeiture of degree eligibility.

A master’s program that is pursued during the summer and the academic year must also be completed within five years.

Master’s Comprehensive Examination. The master’s comprehensive examination in the Department of Physics is an oral test on material covered in the basic graduate courses. The governing board consists of the research advisor of the student and two other faculty members. A majority vote of the three examiners decides the outcome. One retake is permitted if recommended by the board. The student is immediately informed of the results of the examination.

Award of Master’s Degree to Doctoral Students. A doctoral student may receive the master’s degree without taking the master’s comprehensive examination on the recommendation of the department and completion of: (1) the 30 credit hours required by the department for the master’s degree; and (2) all parts of the doctoral candidacy examination. (By passing the doctoral candidacy examination, the student is also considered to have passed the master’s comprehensive examination.) Post-candidacy Ph.D. students should see the DGS to discuss this option.
Ph.D. Course Requirements

For new students entering the department in the Fall of 2010 and beyond, the standard curriculum for the first two years of graduate study consists of eight required courses (the “core”), six mini courses on research areas found within the department (the “breadth requirement”), and one research-area course. Syllabi for these courses are available through the department web site.

Required Core

- PHYS 70003: Mathematical Methods of Physics
- PHYS 71010: Methods of Experimental Physics
- PHYS 70005: Classical Mechanics
- PHYS 70007: Quantum Mechanics I
- PHYS 70008: Quantum Mechanics II
- PHYS 70006: Electromagnetism
- PHYS 80001: Electrodynamics
- PHYS 80002: Statistical Thermodynamics

These courses are all 3-credit courses and are graded with a letter grade.

Breadth Requirement

- PHYS 70200: Introduction to Astrophysics
- PHYS 70300: Introduction to Atomic Physics
- PHYS 70400: Introduction to Biophysics
- PHYS 70500: Introduction to Condensed Matter Physics
- PHYS 70600: Introduction to Elementary Particles Physics
- PHYS 70700: Introduction to Nuclear Physics

These courses are all 1-credit courses and are graded satisfactory or unsatisfactory and will not have a final examination. These six courses will be taught sequentially during the academic year, three in the fall semester and three in the spring semester.

Research-Area Course

Six areas of research are presently recognized within the department. With the assumption that at least two new students are entering each area each year, the six research areas will offer at least one course per year introducing the students to the research area. While the research groups will be responsible for content, the level will typically be set by requiring pre-requisites from the core curriculum. Some groups may choose to provide two or more courses, alternating the year of offering.

As of Fall 2010, the following are the options for research-area courses:

Astrophysics
- PHYS 80202: Astrophysics: Stars
- PHYS 80203: Astrophysics: Galaxies
• PHYS 80204: Cosmological Physics

Atomic Physics
• PHYS 80301: Atomic Physics

Biophysics
• PHYS 80401: Biophysics

Condensed Matter Physics
• PHYS 80501: Solid State Physics
• PHYS 80502: Soft Condensed Matter Physics
• PHYS 90503: Quasiparticles in Condensed Matter Physics

Elementary Particle Physics
• PHYS 80601: Elementary Particles Physics

Nuclear Physics
• PHYS 80701: Nuclear Physics

These courses are all 3-credit courses and are graded with a letter grade.

At the discretion of the DGS and with the approval of the research advisor, another course in another area (such as general relativity or a course in another department which will be helpful to the student’s research) can be used to fulfill the research-area requirement in the student’s chosen area. This exception can be requested when fewer than two students enter a research area in a given year or when the subject of a student’s research is not covered by the standard research-area courses.

**Options for Satisfying the Breadth Requirement**
Starting in the Fall of 2010, new students entering the department will be expected to take all six introductory breadth courses in their first year of graduate studies. In exceptional circumstances, the breadth courses can be postponed by one year or a student can seek to cover the breadth requirement by taking three research-area courses, including one from their own area of research and one each from two other research areas. A mixture of three introductory breadth courses plus two research-area courses is also an option. All course plans for satisfying the breadth requirement must be approved by the DGS.

**Statement on Advanced Electives**
The department strongly encourages graduate students to take one or more advanced electives, e.g., General Relativity, Quantum Field Theory I and II, courses from their own and other areas of physics, and graduate electives from other departments of the university. Usually, the student should complete requirements before taking advanced electives. Exceptions to this must be approved by the DGS. Students with research advisors should also seek permission from their research advisor before taking an advanced elective.

Decisions on the offering of elective courses are typically made by the course offerings committee at the time when fall and spring semester course schedules are developed, typically January for the fall semester and early September for the spring semester. Graduate students can communicate their interest in physics advanced electives through petition to the course offerings committee. The signers of the petition thus indicate their willingness to take a new course if offered.
**Credits and Research Courses**

Graduate students accumulate credits that are the combination of the standard lecture courses plus a mixture of seminar and research courses. Some courses are graded with a letter grade, others with a satisfactory/unsatisfactory (S/U) grade. The introductory breadth courses, the seminar courses, and most research courses are graded on the S/U system.

The department offers three types of research courses each semester, including:

- **PHYS 98698**: Graded Research and Dissertation
- **PHYS 98699**: Research and Dissertation
- **PHYS 98700**: Non-resident Research and Dissertation

Students who are registering for courses need to be aware of the differences between these three class numbers. As of the time of writing (Fall 2011), two of these courses were set as variable credit – PHYS 98699 and PHYS 98700. Both are also graded on the S/U scale. The expectation is that students will register for the appropriate course so that their total schedule is at least 9 credits (“full time”). (Physics students in years 1 to 8 are all required to have a full-time schedule of at least 9 credits per semester.) At the time of registration, students will select research credits to be a to-be-determined number between 0 and 9. The total may include a combination of PHYS 98698 and PHYS 98699.

Since the Fall of 2011, enrollment in the course PHYS 98698 has been restricted to a proscribed set of student circumstances. To understand this, first note that PHYS 98698 is graded with a letter grade and is only available in the 1 credit option (it is not variable credit). The letter-grade course is used for students who have been invited but not yet taken their candidacy examinations. The student in this situation is expected to register for 1 credit of PHYS 98698 and then the credits required of PHYS 98699 in order to be considered to be full time (9 credits or more, for students in years 1 to 8). The grade earned in PHYS 98698 should be considered as an indication from the research advisor of how ready the student is to take the candidacy exam. Starting with the Fall of 2011, students who are still taking required graduate courses are restricted from taking PHYS 98698 for credit.

The selection of the research class, Non-resident Research and Dissertation, means that the student is not living near the University of Notre Dame. Three common examples include students located and doing research at CERN, those who are located at Argonne National Laboratories, or those who are “all but dissertation” (ABD), that is, those completing their writing of the thesis at a location other than Notre Dame. Since the DGS needs to know the status of these students, it requires the DGS’ permission to enroll in PHYS 98700. Note, courses such as PHYS 98698 are considered by the university to be residential; thus non-residential student should just take 9 credits of PHYS 98700.
Course Schedule

Schedule for First- and Second-Year Students

The following is the course schedule for most physics graduate students for the first two years of graduate study:

**First Year, Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colloquium</td>
<td>0</td>
</tr>
<tr>
<td>Mathematical Methods of Physics</td>
<td>3</td>
</tr>
<tr>
<td>Classical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>Quantum Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Astrophysics (S/U)</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Atomic Physics (S/U)</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Condensed Matter Physics (S/U)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total** 12 credits

**First Year, Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colloquium</td>
<td>0</td>
</tr>
<tr>
<td>Electromagnetism</td>
<td>3</td>
</tr>
<tr>
<td>Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>Methods of Experimental Physics</td>
<td>3</td>
</tr>
<tr>
<td>Seminar</td>
<td>2</td>
</tr>
<tr>
<td>Research and Dissertation</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Elementary Particle Physics (S/U)</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Nuclear Physics (S/U)</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Biophysics (S/U)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total** 15 credits

**Second Year, Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colloquium</td>
<td>0</td>
</tr>
<tr>
<td>Electrodynamics</td>
<td>3</td>
</tr>
<tr>
<td>Statistical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>Research-area course or elective</td>
<td>0-3</td>
</tr>
<tr>
<td>Seminar</td>
<td>2</td>
</tr>
<tr>
<td>Research and Dissertation (98699)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total** 9-12 credits

**Second Year, Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colloquium</td>
<td>0</td>
</tr>
<tr>
<td>Research-area course or electives</td>
<td>0-9</td>
</tr>
<tr>
<td>Seminar</td>
<td>2</td>
</tr>
<tr>
<td>Research and Dissertation (98699)</td>
<td>1-7</td>
</tr>
</tbody>
</table>

**Total** 9-15 credits

Students who enter with advanced standing will follow a modified schedule and generally take at least three 3-credit classes per semester until the core curriculum requirements are met.
Notes on Courses

(1) Every semester students will register for (and are expected to attend) the weekly general physics colloquium, PHYS 73000. No course credit is given for this.

(2) All of the three-credit courses listed above are part of the required course curriculum for the Ph.D. degree (see Course Requirements list above).

(3) Starting in the spring semester of the first year, students will take at least one credit of research, PHYS 98699, per semester. The appropriate research course to take is the section of PHYS 98699 assigned to the student’s research adviser. Starting in the Fall of 2011, Graded Research and Dissertation, PHYS 98698, is only taken by residential students who have been invited but not yet taken their candidacy examinations.

(4) Once a student starts taking research, then the student is also required to take the corresponding research-seminar course. Choices include:

- PHYS 83200: Astrophysics Seminar 2 credits
- PHYS 83300: Atomic Physics Seminar 2 credits
- PHYS 83500: Condensed Matter Seminar 2 credits
- PHYS 83600: Elementary Particles Seminar 2 credits
- PHYS 83700: Nuclear Seminar 2 credits

Schedule for Advanced Students

For purposes of discussion, advanced students are divided into two categories: (1) Past classes but before the completion of the eighth year of graduate study and (2) Past the eighth year of graduate study.

The first group normally takes what is referred to as a full-time schedule. That is, students take at least 9 credits per semester. Construction of the schedule starts with any required incomplete graduate course requirements. Electives are then considered, with the student’s research advisor being consulted on the appropriateness of those electives. Research courses are a mandatory part of the schedule. If the student is residential and has the status of being invited to take candidacy, 1 credit of the schedule should include PHYS 98698. For those residential to the University of Notre Dame campus, Colloquium (PHYS 73000, 0 credit) and seminar (PHYS 83X00, 2 credits) should also be included in the schedule. The remainder of the credits, to total 9, are from PHYS 98699 (residential students) or PHYS 98700 (non-residential). Questions on the credit distribution should be taken to the DGS.

For those past the eighth year of graduate study, the schedule usually consists of 9 credits of research (PHYS 98699 or PHYS 98700) (full-time students) or 1 credit of either of these courses (part-time students).
Part II
Academic Policies and Procedures
Procedures for Taking Courses

**Pre-registration**

Students can pre-register for courses according to a schedule and procedure established by the Registrar’s Office. Pre-registration is also an option for summer session. Tuition must be requested for summer session. The department will advertise the procedures to be used for requesting summer session tuition through the graduate student list-serv.

**Registration and Enrollment**

Students must register and complete ND Roll call (“enrollment”) before each semester and summer session at the time and locations announced by the University Registrar. Instructions are found through the Registrar’s web site.

**Choice of Courses**

See Part I of this Guide.

**Maximal Registration**

During the academic year, a graduate student may not register for more than 12 credit hours of graded graduate courses each semester, i.e., 60000-, 70000-, 80000- and 90000-level courses. An additional three credit hours of 40000- and 50000-level courses may be taken if authorized by the DGS or department chair and approved by the Graduate School. Exceptions to maximal registration must be approved by the DGS and by the Graduate School.

**Auditing a Class**

With the permission of the instructor and the DGS, the student may also audit courses. A recorded audit is graded V. Incomplete audits are not recorded. The audit grade of V cannot be changed to a credit grade. In the academic year, full-time graduate students may audit courses without charge. In the summer session, there are no free audited courses. Any course taken or audited in the summer session will be charged at the full price.

**Changes in Class Schedule**

Once the semester begins, students may add courses only during the first six class days of the semester. After this time, students may add courses only on the recommendation of the department and with approval of the Graduate School.

Students may drop courses during the first six class days of the semester. To drop a course after this period and up to the mid-semester point (see the Graduate School Calendar for the exact date), students must have the approval of the department offering the course, the physics DGS, and the Graduate School. A course may be dropped after the mid-semester point only in cases of serious physical or mental illness. Courses dropped after this date will be posted on the student’s permanent record with the grade of “W.” It is expected that students receiving a stipend will maintain a full-time schedule.

**Warning:** The consequences of dropping and adding a course in the first six days of the semester may be serious. Students should consult with the DGS to discuss any changes in schedules.
Graduate School Policy: Enrollment and Courses

Note, The Graduate School maintains information on academic policy and procedures in several locations, including their own web site, the Graduate Bulletin, and a summary of their policy given annually to the DGSs. Recognizing that having one place to access information is helpful to the department, portions of this guide quote common Graduate School policies. These sections are shown indented using a different set of fonts. While every attempt is made to make this information error free, in the case conflicting information is found, original Graduate School sources take precedence over this Graduate Guide. In some cases, more information will also be available directly through Graduate School sources.

Details: Enrollment
Once admitted, all degree and nondegree graduate students must complete ND Roll Call before the start of each semester.

Any admitted student who fails to enroll for one semester or more must apply for readmission upon return.

Details: Full-time Status
A full-time student must register for nine credit hours per semester during the first five years of study. Students not in residence should register for the appropriate non-resident course, and are charged a reduced tuition fee.

A nondegree student must register for at least nine credit hours per semester, or six in the summer session, to claim full-time status.

All degree-seeking students are expected to maintain full-time status and to devote full time to graduate study. No degree student may hold a job, on or off campus, without the express permission of his or her department and the Graduate School.

Details: Continuous Enrollment
All students must enroll each semester during the academic year to maintain student status. Continuous enrollment is normally met by enrollment in the University and registration in a graduate-level course relevant to the student’s program. Any exception to this rule, including a leave of absence, must be approved by the Graduate School.

A student who interrupts his or her program of studies for five years or more will forfeit the credit for all courses.

Full-time students receiving an academic stipend during the summer who are conducting research or departmental duties must be enrolled and registered. If no courses are required, the student should register for a zero credit independent research course. Failure to properly register and enroll during the summer session will result in FICA taxes being withdrawn from the student’s stipend.

Maximal Registration
A graduate student in the academic year may not register for more than 15 credit hours of graduate courses, i.e., 60000-level courses and higher. In the summer session, a graduate student may not register for more than 10 credit hours.
Adding/Dropping Courses
A student may use InsideND to add or drop courses during the first six days of the semester.

After this period and up to the midsemester point, a student must fill out a course change form and obtain the approval of his or her adviser and the Graduate School.

Auditing a Course
Before an audit request is submitted (http://graduateschool.nd.edu/forms/course-audit-request-form/), the student must be registered for the course he or she wants to audit. Students are charged full tuition for audits taken during the summer session.

Please note that audits do not factor into the student’s GPA, nor do they count toward full-time status.

Grade Changes
A student receives the temporary grade of “I” when, for acceptable reasons, he or she has not completed the requirements for a 60000- or higher level graduate course within the semester or summer session.

The grade of “I” cannot be given to a course below the 60000 level, or to graduating students in the final semester or final summer session of a terminal degree program.

A student must complete the course work for a grade prior to the beginning of the final examination period of the next semester in which the student is enrolled. If a student receives an “I” for a summer session course, he or she must complete the course work for a grade before the final examination period begins for the next semester or summer session (whichever comes first) in which the student is enrolled.

The University temporarily computes this grade as the equivalent of an “F” in calculating the GPA. When a student fulfills the above requirements, the “I” is replaced by the new grade. Faculty will be given 30 days from the last day of classes of the following semester to turn in the grade change form to the Graduate School. Should the student not complete the course work as required, the “I” will convert to an “F” on the transcript.

Summer Session
Policy on Summer Session credits and tuition changed as of Spring of 2011. The following describes policy (and the reasons behind the policy) at the time of writing this document.

There are different situations where students should or might want to take a course during Summer Session. First, there is the situation of those who might need academic credit in summer session. This includes those expecting to earn an academic degree (M.S. or Ph.D.) at the end of Summer Session. It also includes those with a need or desire to take an academic class during Summer Session. This document refers to this group as the “academic-need group.”

The second group includes the other students, those who are continuing graduate students and earning stipends for the summer. These students typically do not have an academic need to take any graduate course. If they were full-time students in the spring semester, they remain full-time students during the summer. As full-time students, they should be exempt from FICA taxes. But because the Notre Dame payroll system looks at the number of credit hours a student is registered for each pay period in order to determine eligibility for the exemption, there is a need
for the students to at least register for a zero-credit class. So, the Graduate School has set up a special zero-credit course for each program, “Independent Summer Research,” PHYS 67890. By registering for this class, the students will be recognized as exempt from FICA taxes for their summer stipend. The second group of students is thus labeled the “financial group.” (Those international students who are already exempt from FICA taxes do not need to take PHYS 67890.)

In the “academic-need group” are students expecting to earn a degree (Master’s or Ph.D.) during Summer Session. To be listed for an August degree, students must be enrolled in Summer Session. Any graded course can be used to establish degree eligibility. But the tuition scholarship granted to most graduate students does not apply for Summer Session. So, to avoid unnecessary costs, the Graduate School has decided that it is allowable for students seeking a degree in August to register for 0 credits of Research and Dissertation, that is, either PHYS 98699 or PHYS 98700. The registration for the class establishes the student’s degree eligibility for the summer. Again, no tuition is required to take the 0-credit class.

Also in the “academic-need group” are students who wish to take a credit-bearing class during Summer Session. The department has a pdf form for students who wish to request tuition to take such a class. There is a limit on how many credits can be requested (typically, three), on what courses can be requested (relevant to degree and not normally offered during the academic year). Questions on the approval process should be brought to the DGS. Details on how to access the approval form are normally circulated in the spring by email.
**Graduate School Policy: Leave and Related Options**

This section quotes Graduate School Policy on leaves, medical separation from academic duties, child birth accommodation, and withdrawal. While every attempt is made to make this information error free, in the case conflicting information is found, original Graduate School sources take precedence over this graduate guide.

**Leave of Absence**

A student who is in academic good standing and wishes to voluntarily interrupt his or her program of study must request a leave of absence or withdrawal. (See “Leave of Absence” on the Registrar's site: http://registrar.nd.edu/leaveofabsence.shtml).

A student may request a leave of absence for a maximum of two consecutive semesters. A request for a leave of absence must be made before the semester in which the leave is taken; otherwise the student must withdraw from the University. All leaves of absence must first be approved by the student’s department and then by the Graduate School.

A student on medical leave of absence will require clearance from Student Health Services prior to readmission.

**Medical Separation from Academic Duties**

Students enrolled in the Notre Dame Graduate School who wish to temporarily interrupt their programs for medical reasons must request a separation from the Graduate School. Students are eligible under this policy if they have a “serious medical condition.” For purposes of this policy, “serious medical condition” means a medical condition that (1) requires multiple-day hospitalization OR (2) renders the student unable to engage in coursework and all other Graduate School-related duties for a period of at least ten (10) calendar days. Certification by a physician that the student has a serious medical condition as defined in this policy must be submitted to the Graduate School no less than three months prior to the separation period for predictable requests. (For another option, see Childbirth and Adoption Accommodation.) Regardless of the nature of the medical condition, the duration of the separation will be as certified by the physician up to a maximum of six weeks or as soon as the need is foreseen for emergency requests. Students may utilize this medical separation policy two non-consecutive times during their graduate studies. Should students need more than six weeks at any one time, they must withdraw from the University. Leaves of absence for one semester or more for medical or other reasons are governed by the Graduate School Leave of Absence policy.

Full-time degree-seeking students in their fifth year of study or less who are receiving financial aid from the Graduate School or external funds will receive a stipend equal to their normal stipend during their period of separation, for a maximum of six weeks paid by the Graduate School. Students will retain their tuition scholarships, access to on-campus medical facilities, and all other resources available to students during the entire separation period (up to six weeks). Students also will be deemed “continuously enrolled” at the University during the entire period of separation.

Teaching assistant and research assistant duties will cease at least during the period of separation. Students are responsible for making arrangements, through their departments, to cover their duties. Students taking classes will be required to make arrangements with individual
course instructors for completion of any courses in progress during the leave. Students will be granted the option to re-schedule exams, extend candidacy deadlines or other deadlines not discussed herein. Students are responsible for making arrangements to reschedule exams, extend deadlines and to make up other work not discussed herein. Unlike a regular one-semester leave, time off in conjunction with this policy will count towards the students’ degree time limit of eight years and university-sponsored funding cap of five years.

**Childbirth and Adoption Accommodation Policy**

*Note: Students have three options for childbirth:*
- Leave of Absence
- Medical Separation
- Childbirth and Adoption Accommodation Policy

The following policy is intended to assist graduate students who are new parents. It is a supplement to the six-week medical separation policy described above, which is also available in the case of childbirth. Unlike the medical separation policy that covers any medical condition, this accommodation policy addresses a single set of circumstances: new parenthood. It is not a leave of absence; it is an accommodation. Students maintain their standing as students and are eligible for financial support.

Departments are encouraged to work out specific arrangements with students, on a case-by-case basis, within the broad framework of this policy.

**Eligibility**

All full-time students in good academic standing who are primary and full-time caregivers of a newborn child or a child less than 5 years old newly placed in the home are eligible. Students must have completed one semester and have been registered and enrolled for at least another semester prior to the request. Students may make use of the policy up to two times provided that at least one semester of full-time enrollment occurs between requests. Parents who are not the primary and full-time caregiver may apply for a leave of absence, but are not eligible for accommodation.

**Accommodation in Comparison to Leave**

This accommodation is intended to provide relief from full-time responsibilities while providing continuing financial support. It differs from a leave of absence in three ways.

First, in a leave of absence students are relieved of all responsibilities. If a student wishes to devote full-time care to a newborn or a newly adopted child, the student should request a leave of absence. Under this accommodation, students are relieved of full-time graduate studies/duties (such as teaching and research), of official academic exams (e.g., oral candidacy exams, master’s comprehensives, etc), and of coursework deadlines for one semester (16 weeks) during or immediately following the semester in which the birth or adoption occurs. [Students may take incompletes in courses or take a reduced course load; departments may still define these students as full-time, despite the credit hour reduction.] The choice of the semester is the student’s. Students are expected to register and enroll full time and to remain engaged, if at a reduced level. Departments are encouraged to be as flexible as possible with the student seeking accommodation. This parent’s assignments should allow for maximum flexibility in his/her schedule during the first 6 weeks after the child arrives. The amount of engagement and reduction in workload during the entire accommodation period (both prior to and after the birth or adoption of a child) should be specified in writing prior to the onset of the accommodation
period. This agreement should then be approved and signed by the student, the student’s adviser, the departmental DGS and the chair or the graduate studies committee, and sent to the associate dean of students in the Graduate School for review. In the event that the student and department cannot reach a decision about an appropriate workload, the associate dean of students in the Graduate School should be consulted. The details of the agreement may be re-assessed and revised after childbirth or adoption. Accommodated students should submit a brief written progress report to their advisors at the end of the accommodation period.

Second, a leave of absence stops the student’s eligibility clock; the accommodation extends it. In the case of a leave, a student still has eight years to fulfill all requirements and must meet all of the normal program and Graduate School deadlines. In the case of accommodation the student’s academic eligibility clock is extended by a semester, effectively adding a semester to the student’s eligible time to meet all degree requirements.

Third, students who elect to take a leave of absence forego financial support from the University. Students who elect to take accommodation will continue to receive financial support (see below) and the health insurance subsidy.

If, after the end of the accommodation period, the student wishes to have more time, he/she can apply for a leave of absence. The clock will stop, but so will funding. Students on leave may still enroll in the health insurance plan at their own expense.

**Funding**

Students who are fully-funded and who have not yet completed their 5th year of study will continue to be supported financially. They will continue to receive a stipend at the same level for the length of the accommodation (see below for possible exceptions), receive a tuition scholarship, and receive the health insurance subsidy from the Graduate School. There are two important limits: the total number of years of funding will not be extended and funding is for the academic year only.

- Teaching assistants will be relieved of all teaching duties. *Those students for whom serving as a TA is a requirement must fulfill the requirement in a later semester.* As stated above, they must continue to be intellectually engaged in the activities of the department and their research. Details of this engagement should be worked out in writing between the student and the department prior to the start of the accommodation.
- Students on research grants who wish to continue to receive full funding must follow the following guidelines. If the student is funded by a grant, the level of support is determined by the granting agency. If the student is expected to devote 50% or 75% of his/her former working hours to his/her research, the grant will pay 50% or 75% of her former stipend, assuming he/she works at full capacity during those reduced hours. The Graduate School will make up the difference between what the grant pays and the former stipend, up to 50% of the former stipend. If the grant funding is reduced below 50%, the Graduate School will still pay 50%. Details of the final arrangement should be worked out in writing between the student and the department prior to the start of the accommodation.
- If a student is funded by an external fellowship, the level of support is determined by the foundation. If the fellowship is reduced or eliminated as a result of a new child, the Graduate School will fund up to 50% of the student’s former stipend under the fellowship. Questions should be directed to the Graduate School.
Parental relief cannot be combined with other funding.

Terminal master’s students, and students who have completed their 5th year of study, are eligible for the accommodation only, not for funding.

**Notification**
Eligible students must notify their adviser, director of graduate studies and the associate dean of students in the Graduate School of their intent to use the accommodation policy at least 60 days prior to the expected date of childbirth or adoption. A form is available in the Family Support section of the Graduate School website for this purpose (see http://graduateschool.nd.edu/graduate-student-life/family-support/).

**Withdrawal**
A student in academic good standing who wishes to voluntarily interrupt his or her program of study must request a leave of absence or withdrawal.

A student who, for some urgent reason, must withdraw from the program after the beginning of the semester must apply for a withdrawal. To do so, the student must complete the “Separation” form from the Registrar’s website and inform his or her department and the Graduate School. (Access the form via the Registrar’s website at http://registrar.nd.edu.)

Upon approval of the withdrawal, the University enters a grade of “W” for each course in which the student was registered. If a student leaves the University without following the procedure described above, a grade of “F” is recorded for each course.
Part III
Basic Policies
Financial Support

In order to be eligible for University funding, the student must be enrolled full-time, seeking a graduate degree at Notre Dame, and be in academic good standing (defined below).

Financial support allotted by the Graduate School for distribution by the department includes academic year tuition scholarships, graduate assistantships, and departmental fellowships, as well as summer session tuition scholarships and University fellowships.

All entering graduate students and some continuing students in good academic standing are awarded graduate assistantships (or fellowships) from the University. All graduate assistantships (GAs) are teaching assistantships (TAs) and have duties and responsibilities as discussed below.

Advanced graduate students are often supported by research assistantships (RAs). Some advanced graduate students are supported by the department as teaching assistants.

The department honors support commitments made in admissions letters to students as long as the student remains in good standing. Typically, students are supported as graduate assistants until the candidacy examination is passed. Then the department expects that the research advisor will pick up the student’s funding through Research Assistant (RA) support. For research advisors without external financial support, the department has typically committed GA support through the student’s fifth year. Research advisors without external financial support are expected by the department to limit the number of Ph.D. students supervised (generally, to just one student).

It is Graduate School policy that students beyond six years of enrollment are ineligible to receive a GA stipend.

General Rules

Assistants and fellows who receive a full stipend should not be employed elsewhere either on or off campus. Graduate students are provided stipends so that they can devote full time to their studies. Therefore, they are discouraged from taking part-time employment. If students have a personal or professional reason to claim exception, part-time work must be approved by the graduate advisors (the DGS and research advisor), the primary employer, and the Graduate School.

Assistants and fellows who receive a full stipend should also take a full-time academic schedule. In years 1 through 8, this is at least 9 credit hours per semester. Details of courses appropriate for this schedule are given earlier in this guide. After the eighth year, the student will generally have completed credit and course requirements for the degree. Then, registration will be either 9 credits (full-time) or 1 credit (part-time).

Recipients of federal financial aid must comply with the standards of progress set by their respective departments for their particular programs of study. The director of financial aid will notify students in writing when failure to maintain progress will result in the loss of financial aid. Appeals indicating mitigating circumstances must be made in writing to the director of financial aid.


**Tuition Scholarships**

All entering graduate students and all continuing students in good academic standing and on stipend support are awarded academic year tuition scholarships. These cover full-time schedules (9 credits or more) for students in years one to eight. A graduate student cannot receive more than eight academic years of tuition support from the Graduate School or from funds allotted by the Graduate School to departments.

After the eighth year of graduate study, the student will require both a Graduate School approval for continued Ph.D. eligibility and will need non-graduate school funds for tuition for courses. The minimal registration to remain a graduate student is 1 credit during the academic year (part-time).

**Summer Tuition**

The department has a pdf form for students who wish to request tuition for a credit-bearing course taught in Summer Session. Generally approved requests include courses appropriate for the student’s research that are not taught during the academic year.

**Teaching Assistantships**

Graduate students who are teaching assistants (TAs) assist in undergraduate and graduate laboratories, tutorial sessions, or with grading problems or examinations. The time required for these duties is normally 15 hours per week. Detailed TA information is posted on the department web site.

Before teaching assignments are made, the supervisor of teaching assistants will ask the faculty their needs and preferences for TAs and also ask the TAs for their preferences for teaching duties. Preferences are considered, and honored when possible, subject to the constraint of meeting the department’s needs. Minimal revisions to assignments are made during the first week of classes when scheduling conflicts occur. Problems with the teaching assignments, the supervisor, the TA, or the TAs teaching load should be called to the immediate attention of the supervisor of TAs.

At the end of each semester, every teaching assistant is rated by the faculty on the manner in which he or she has performed these duties. A student who has performed his or her assigned duties poorly will receive a letter of warning. If his or her performance has not improved by the end of the semester, then that person risks losing the TA stipend or having the TA stipend reduced.

Each spring, the Kaneb Teaching Center honors students who have demonstrated a history of exceptional performance as a TA.

**Research Assistantships**

Post-candidacy students may be supported by research grants made to their research advisor from agencies outside the University. The duties required for such grants are defined by the research director and the continuation of such support is subject to the availability of funds and the advisor’s discretion. Not all professors have such grants.
**Fellowships**
The department and University also award fellowships to a number of highly qualified graduate students. Notification is by letter.

Information on fellowships available from inside and outside of the University is shared periodically with the students and advisors via the department e-mail list-servs. Students and advisors are also urged to do their own searching for academic-year and summer fellowship opportunities. Information is also posted on the Graduate School and the department websites.

**Summer Funding**
Summer funding is provided primarily through external funding obtained by the research advisors. A limited number of TA positions and fellowships exist for summer. The department develops a list of those graduate students desiring summer TA support. In consultation with the chair, the DGS then makes the summer TA assignments.

**Student Health Insurance Subsidy**
For 2010-2011, the cost for a single student for health insurance is $1,666. For those on full-time RA or TA who use the university policy, the university will provide a $1,175 supplement, which is 70.5% of the cost. This supplement will come from either the Graduate School (for GAs) or from the grants (for RAs).

For more details, see the Graduate School’s web site.
Definition of Good Standing

The department and the Graduate School are both charged with monitoring the progress of each graduate student towards the completion of the graduate degree. For the Graduate School, to be in academic good standing, the student must maintain a grade point average (GPA) of 3.000 or higher, have a dissertation proposal approved within eight semesters, and must have been enrolled as a graduate student at Notre Dame for sixteen semesters or less. For the department, to be in good standing also requires that the student be making appropriate progress towards completion of the degree.

Whenever there are significant concerns about a student’s progress towards the degree, the DGS or department chair will send that student a warning letter. After warnings, in cases where the student has failed to meet the department’s or Graduate School standards, the student will be terminated from the program.

The department, through the instructors in the core curriculum and its research advisors, continually monitors the performance of each graduate student. Concerns should be brought to the attention of the DGS and the chair. Starting this academic year, evaluation forms will be given annually to each graduate student. Additionally, all graduate students will be responsible for maintaining their own Curriculum Vitae (C.V.). Workshops on how to create and maintain a C.V. will be held each fall semester. A copy of the student’s C.V. is to be turned in to the department at the end of each spring semester and also just prior to graduation.

The following is a description of the evaluation standards applied by the department to each student at the end of each academic year.

For a pre-candidacy student, the department monitors the grades in the first- and second-year course work and in the qualifying examination. At the end of each academic year, the DGS will formally evaluate each pre-candidacy student using the departmentally maintained evaluation form (for a draft, see Appendix B).

At the end of the first year, to be in good standing, the student should have a minimum GPA of 3.0, have completed a minimum of 18 credits in the core curriculum, and should have made a preliminary selection of a research advisor. (Students who entered with advanced standing will take three 3-credit classes per semester until core curriculum requirements are met.)

For a second-year student, to be in good standing, he/she should have a minimum GPA of 3.000, should have completed a minimum of 33 credits in the required graduate curriculum, should have passed the qualifying examination, and should have taken at least two credits of research with the research advisor. If the student is on track with course work and grades, normally this is the first time when he or she will be considered for candidacy. But if the student has not passed the qualifying examination by the end of the second year, the student will not be continued in the Ph.D. program.

Ideally, the student should complete candidacy requirements by the end of the third year. To be in good standing, the student must have maintained the 3.000 GPA and had a continued record of satisfactory performance in research with a research advisor.
For a fourth-year student to be in good standing, the student must have passed the candidacy examination before the end of the fourth academic year. Students who have not passed this examination will lose the possibility of Graduate School support until the examination is passed.

For post-candidacy students, annual research committee meetings are required. These meetings should be scheduled by the student in the time period between spring break and the end of spring final exams. A sample form for reporting the results of this meeting is given in Appendix B (pdf and docx versions of the form are available through the department web site).

After eight years (or sixteen semesters) of graduate study, a student is no longer in good standing with the department or the Graduate School. This means that the student is no longer eligible for financial support (including tuition) from the Graduate School. In order to continue as a graduate student beyond the eighth year, an extension of degree eligibility must be granted by the Graduate School. These extensions are only granted in cases where there has been genuine progress towards completion of the doctoral dissertation. However, all Graduate School funding terminates at the end of the eighth year.
Stipend Policy

Loss of GA Stipend

The following are examples of situations where the student will lose Graduate School (GA or fellowship) stipend support:

- The student has a cumulative GPA of 3.000 or less, and thus is not in good standing;
- The student has not passed the candidacy examination by the end of the fourth year, and thus is not in good standing;
- The student exceeds six years (twelve semesters) of enrollment.
- The student has a history of performing his or her assigned TA duties poorly.

For pre-candidacy students with a cumulative GPA falling below 3.000, continued stipend support by the department or research group will be determined on a case-by-case basis. Continued stipend support by the department or research group is also made on a case-by-case basis for students past the fifth year.

Support by the department or research group is generally a temporary situation for the student, ending typically in one of the following scenarios:

- The student returns to good standing (and returns to GA support);
- The student fails to return to good standing (and is dismissed by the department);
- The student or the research advisor finds alternate support (fellowship or RA);
- The student graduates.

Note, it is possible for a student to be in good standing, but not be supported financially. It is also possible to be not in good standing, but to be supported (for a short period of time) by the department or other sources (e.g., RA).

In all cases, awarding of stipends by the department is subject to the availability of funds.
Dismissal Policy

The goal of having a dismissal policy is to have processes protecting both students and programs. Academic programs have the right to dismiss students for poor performance. In Physics, students who are not in good standing may be subject to dismissal by the department. All dismissal decisions will be communicated to the student in writing.

Students who may be subject to dismissal will receive written notifications of the standards in advance from the department or Graduate School. This guide defines what is meant by good standing in the department. This guide also states department expectations on required examinations, i.e., qualifying, candidacy, and defense. In addition, this guide discusses dismissal from a research group. Every attempt will be made by the department to warn students of situations where dismissal may occur.
Other Policies
Physics graduate students are students in the Department of Physics, in the Graduate School, and also in the University. Students are bound by a series of codes, rules, and policies which regulate student life at Notre Dame. Some of these are rules and policies created by the Department of Physics. Others are rules and policies of the Graduate School. And others are rules of the University itself.

A primary source of information for Graduate School rules and regulations is their web site and the Bulletin of Information of the Graduate School, also available through the Graduate School web site. If there is any contradiction in policy between this guide and the Bulletin, then the Bulletin’s statement of the rule takes precedence.

Another primary source of information for the University’s rules is du Lac, which is available through the web site of the Office of Residence Life and Housing. If there is any contradiction in policy between this guide and the Grad Handbook, then the Grad Handbook’s statement of the rule takes precedence.

This guide is the primary source of information for rules and policies specific to graduate students in the Department of Physics.

Students are bound throughout their stay by the version of these regulations in effect at the time they were first admitted for graduate work. However, if a new regulation is adopted which is less stringent than the one previously in effect, the new regulation applies also to the graduate students currently enrolled in the department. If, in unusual circumstances, a student’s program or status is at variance with these regulations so that an exception must be made, such an exception must be approved by the physics faculty upon the recommendation of the DGS.

University Policies
Graduate students should refer first to the section of du Lac entitled “University Standards of Conduct.” This section describes a number of university policies, including those for sexual harassment, sexual misconduct, and smoking, and alcohol and controlled substances. Students should become familiar with this entire section of du Lac. Unless otherwise noted, the policies and procedures of du Lac apply to all students, undergraduate, graduate, or professional, on or off campus. In reading these sections, please remember that these policies are in place for the benefit of the University community as a whole. For example, harassment policies list types of behaviors that could get a graduate student into trouble (e.g., when acting as a teaching assistant) and also provide steps to follow if he or she believes that he or she is the victim of either discriminatory or sexual harassment.

Another important section of du Lac is the section entitled “Academic Policies and Resources.” Here can be found a reference to the Academic Code. The Academic Code is the set of “policies and regulations governing the student attainment of academic credit and degrees from the University of Notre Dame.” Also found here is the Academic Code of Honor. (This honor code applies to undergraduate students; the Academic Integrity section of the Bulletin, reproduced below, describes the code that applies to graduate students. Teaching assistants working with undergraduate students will need to be familiar with the undergraduate’s honor code.)
Finally, there are many helpful sections in *du Lac* describing university services that are available to graduate students.

**Academic Integrity Policy**

Integrity in scholarship and research is an essential characteristic of our academic life and social structure in the University. Any activity that compromises the pursuit of truth and the advancement of knowledge besmirches the intellectual effort and may undermine confidence in the academic enterprise. A commitment to honesty is expected in all academic endeavors, and this should be continuously emphasized to students, research assistants, associates, and colleagues by mentors and academic leaders.

The procedures for ensuring academic integrity in the Graduate School are distinct from those in the Undergraduate Code of Honor. The following apply to both degree-seeking and non-degree-seeking students.

Violations of academic integrity may occur in classroom work and related academic functions or in research/scholarship endeavors. Classroom-type misconduct includes the use of information obtained from another student’s paper during an examination, plagiarism, submission of work written by someone else, falsification of data, etc. Violation of integrity in research/scholarship is deliberate fabrication, falsification, or plagiarism in proposing, performing, or reporting research or other deliberate misrepresentation in proposing, conducting, reporting, or reviewing research. Misconduct does not include errors of judgment, errors in recording, selection, or analysis of data, differences in opinions involving interpretation, or conduct unrelated to the research process. Misconduct includes practices that materially and adversely affect the integrity of scholarship and research.

Any person who has reason to believe that a violation of this policy has occurred shall discuss it on a confidential basis with the department chair or director of the appropriate institute. If a perceived conflict of interest exists between the chair/director and the accused, the next highest academic officer shall be notified of the charge. The chair/director shall evaluate the allegation promptly. If it is determined that there is no substantial basis for the charge, then the matter may be dismissed with the fact of dismissal being made known to the complainant and to the accused if he or she is aware of the accusation. A written summary of charges, findings, and actions shall be forwarded to the dean of the Graduate School as a matter of documentation. Otherwise, the chair will select an impartial panel consisting of three members, one of whom may be a graduate student, to investigate the matter. The chair will inform the accused of the charges. The panel will determine initially whether to proceed directly to a hearing to further investigate the case, or to dismiss the charges. If the panel decides to proceed directly to a hearing, the hearing will be held within 10 days of the original notification. If the panel decides that further investigation is necessary, it shall immediately notify the chair. If it decides that a hearing is not warranted, all information gathered for this investigation will be destroyed. The utmost care will be taken to minimize any negative consequence to the accused.

The accused party must be given the opportunity to respond to any and all allegations and supporting evidence at the hearing. The response will be made to the appointed panel. The panel will make a final judgment, recommend appropriate disciplinary action, and report to the chair in writing. The report will include all of the pertinent documentation and will be presented within 30 days after meeting with the accused. Copies of the report are to be made available to the accused, the chair, and the dean of the Graduate School. If a violation is judged to have
occurred, this might be grounds for dismissal from the University; research/scholarship violations might be reported to the sponsor of the research effort (e.g., NSF, NIH, Lilly Foundation, etc.), if appropriate.

If the student chooses to appeal, he or she must address the appeal in writing to the dean of the Graduate School within 10 days. The student has the right to appear before the dean or his or her delegate. The dean may decide to appoint an ad hoc committee to handle this appeal, if deemed necessary.

Violations of academic integrity by individuals who are not students are governed by different rules; students who are working on externally sponsored programs may also be covered by sponsor-mandated rules. Contact Tracey Poston, director of research compliance, (574) 631-1461, for further information.

The penalty for a student who admits wrongdoing should be determined by the graduate committee of the student's department or program.
Other Resources

Graduate students will find a lot of helpful information through the Graduate School web site (http://graduateschool.nd.edu/). Worth visiting is the section entitled the “Graduate Experience,” which includes references to family support, health and spiritual resources, recreational and athletic opportunities, and also to the Graduate Student Union (http://gsu.nd.edu/). The Department of Physics typically has two student representatives to the GSU. GSU meetings are generally open for all interested graduate students.

The section of the Graduate School web site entitled “Professional Development” is organized according to four components: Research, teaching, ethics, and career. Many interesting workshops are organized by the Graduate School; it is possible to synchronize a student’s google calendar to the Graduate School’s schedule of events. Starting this academic year, all new graduate students will be required to attend an ethics training workshop. This workshop will be held in January, at a time and place to be announced.

Family Support

New in Fall 2011 is the Graduate School’s statement on family support:

“A Catholic University, Notre Dame is committed to fostering a family-friendly environment for its graduate students, one that makes it possible for those students to balance successfully their parenting responsibilities and their academic pursuits. To that end, the Graduate School at the University of Notre Dame offers the following policies and initiatives...” (See the family support section of the Graduate School’s web site).

Faculty and graduate students are in particular directed to the new Childbirth Accommodation Policy (see Part II of this Guide). Note, new mothers associated with the department are welcome to use the Stepan Lactation Lounge, located in the ladies room on the 4th floor of Stepan Chemistry.

Note, the department does not have written policy on visits to the department of family members. Generally, family members are welcome to visit offices within Nieuwland Science Hall. Visitors are not allowed in teaching and research labs without the permission of the lab director and/or anyone else responsible for laboratory safety.

Also of interest is the reference on the Graduate School’s web site to information on how to create a family-friendly department. While this topic has previously been discussed in the Department of Physics, it is expected that this topic will be reviewed again by the department this academic year.
Policy for Pregnant Graduate Students in Labs

“Exposure to certain chemicals, biological agents and radiation has proven harmful to fetuses, especially in the first three months. For those pregnant graduate students whose research requires them to be present in laboratories where there is a potential biological, chemical or radiation risk to her unborn child, the Graduate School strongly recommends that they immediately inform their advisers of their pregnancy, and then contact the Office of Risk Management. This Office is dedicated to providing professional advice in the areas of safety, occupational health, environmental protection and risk management. Safety professionals can advise the student (and the adviser) about the effects of harmful materials on the development of the fetus, particularly in the critical first three months, and recommend that the woman avoid the laboratory for a certain period of time.”
Communication

**Formal Communication**

The department communicates important decisions to students via letters. The actual offer of admission comes to the student from the Graduate School, but is always associated with a letter of intent, sent first by the department to the student. Fellowship notifications are also sent by letter.

Generally, results of examinations are sent to students by letter. Qualifying examination results are sent by the DGS to the students. The result of written candidacy examinations is communicated to the student by the research advisor. The result of oral candidacy examinations, the master’s comprehensive examination, and the Ph.D. defense is sent to the student by the Graduate School.

For students who are not in good standing, or for those in danger of losing good standing, warning letters are sent by the Graduate School and/or the department.

**Support Notification**

For the first-year of graduate studies, support notification occurs through the student’s admission letter. After the first year, the student is required to have a research advisor. It is the responsibility of the research advisor to communicate support commitments for a given year (e.g., RA or TA) directly to his or her students.

Due to the cyclical nature of external funding, support arrangements can change for a student through the course of a year. If an advisor gains a source of new external support, the appropriate time to change the student from TA to RA is before the next semester begins. The department assumes that the advisor discusses this change in funding directly with the student. Questions on support status should be brought to the Business Manager, the research advisor, the DGS, or the chair, as appropriate.

**General Communication**

Much of the department’s day-to-day communication is done by electronic mail sent to the student’s Notre Dame email address. Students are expected to check their Notre Dame email on a daily basis during the academic year.

The department maintains a list-serv of all of its graduate students. Regular messages will be sent using this list-serv by the department chair, the Business Manager, Graduate Student Coordinator, and the DGS. These emails will include reminders of deadlines and special opportunities for graduate students.

A request for the distribution of a list-serv message to the graduate students can be made by sending a message directly to the list-serv. The message will be distributed if it is judged to be in the best academic interests of the students.

Occasionally, students do not receive email due to mistakes in email configuration or forwarding. It is the student’s responsibility to ensure that the department’s email can be received.
Important messages to graduate students will also be distributed in written form to graduate student mailboxes in the Department of Physics. Students should also check their mailboxes on a daily basis during the academic year.

The chair and DGS will periodically hold “town hall” meetings with the graduate students. General questions and concerns of graduate students should be discussed at these meetings. Additionally, students are urged to bring individual questions and concerns directly to the attention of the DGS or chair.

The bulletin board outside the main Physics Office is exclusively for Graduate Students. Please refer to the bulletin board for information on job opportunities, career training opportunities, course information, upcoming events, etc.

**Department Web Site**

The department will maintain a copy of this guide on its web site, http://physics.nd.edu/. The DGS will work with the department on maintaining up-to-date information in that location for graduate students. Suggestions for new topics to be posted there can be brought to the DGS.

**Calendars**

The Academic Calendar for the university is maintained on the Registrar’s web site. Also found in that location is the schedule for department examinations and final examinations.

The GSU and the Graduate School also maintain calendars of events for graduate students. Also maintained on the Graduate School web site is a calendar of important deadlines for graduate students.

Schedules of the department’s research seminars and colloquia are maintained on the department’s web site.
Miscellaneous

When a Student is Ill
When a student is ill, he/she should seek any needed medical attention and notify anyone in the department who may be affected by the student’s absence from campus. For illnesses of short duration, the student’s TA supervisors, instructors and research advisor(s) should be notified, as appropriate. If possible, TAs should attempt to find their own substitutes for their TA duties, and then notify the supervisor of the arrangement. For classes, instructors will be able to help students in various ways, e.g., by giving extensions of homework deadlines. If the illness is of long duration, the student should consult with the DGS on whether a leave or another option is appropriate (see part II).

Professional Travel
If a student is travelling professionally, e.g., to a workshop or meeting or to do research, then a travel form must be filed with the department office in advance of that travel. There are sometimes occasions when students still in classes will need to travel professionally; in those cases, instructors should be consulted on whether arrangements can be made for making up the work missed. If a student is on TA, then TA responsibilities take priority over research responsibilities. Thus if a TA is considering travel professionally, he/she will need to make acceptable arrangements with their supervisors for covering their duties before committing to the trip.

Vacations
Note, the department does not have written policy on vacation scheduling by graduate students (or by the faculty). For students on TA support, it is expected that the students will be present on campus during the time when classes and finals are held. The breaks between semesters are generally viewed as research time; it is assumed that graduate students will consult with their research advisors on any plans to take time off during those breaks (this excludes university scheduled holidays). Similarly, students on RA or fellowship support are expected to consult with their research advisor(s) on their work schedules during the time period for which they are paid.

Conflicts in Responsibilities
Graduate students are frequently in positions where they hold multiple responsibilities, often reporting to multiple people, e.g., TA supervisors and research advisor(s). If there are issues that result in conflicts of responsibility, the student should consult with the DGS or department chair for advice on how to resolve that conflict. In situations involving course work, teaching, and research, generally course work takes priority over teaching (e.g., a student should not be asked to grade exams during the time when a class is held) and teaching over research (e.g., the student should not be asked to attend a group meeting that conflicts with a teaching assignment).
**International Students**

Most international graduate students are sponsored by Notre Dame by providing the appropriate visa application document, e.g., the I-20 for the F-1 visa and the DS-2019 for the J-1 visa. They should be aware that there are academic circumstances where they may need to consult with the local Immigration Services Office (ISO) in order to remain in lawful immigration status.

The department is required to notify ISO when a graduate student changes his/her degree level or status. Situations included in this are additions of new degree programs, a change from a Ph.D. program to a M.S. program, or a change of academic program. Additionally, the department is required to report to ISO within two days of occurrence when any F-1 or J-1 visa holders: Are suspended, dismissed, or terminated from the program; terminate their programs early for any reason at all (withdrawal, leave of absence, etc.); engage in research or study above; engage in research at another location in the United States outside of Notre Dame; will complete their degrees from outside the United States.

International students may occasionally run into difficulty with visa issues when travelling outside the United States. Occasionally, a physics student receives a visa check. If the visa check occurs between semesters, the student may be delayed returning to campus to either take or teach classes. Students in such situations should notify the department immediately of their status so that contingency plans can be made.
Problems and Grievances

Graduate School Policy
The following quotes from the Graduate School’s web site:

GRADUATE STUDENT APPEAL PROCEDURE
(Approved by the Graduate Council, Nov. 16, 2005)

1. Preamble

The purpose of this procedure is to afford graduate students at Notre Dame the opportunity to resolve complaints dealing with academic issues such as dismissal from graduate standing, placement on probationary status, denial of readmission to the same program (if the student was previously in good standing), and other departmental decisions that terminate or impede progress toward the degree.

This procedure is not to be used to address issues of sexual or discriminatory harassment (see Graduate and Professional Student Handbook), of academic fraud (see ‘Academic Integrity’ section of the Graduate School Bulletin), or for disability-related grievances (see the grievance procedure for students with disabilities in the Graduate and Professional Student Handbook).

This procedure is provided for continuing and returning graduate students in the Graduate School. It is not to be used by applicants for admission or by students in the Law School or the Business School.

2. Departmental Resolution Process

Conflicts should be resolved at the lowest level, i.e., within the student’s department, according to departmental grievance procedures specified in the department’s graduate student guide. (Departments may develop a formal grievance procedure or designate an individual (e.g., the chair or the DGS) who will handle complaints on an ad hoc basis. If the student’s grievance concerns this designated individual, the department must specify an alternate process.)

For complaints originating in the student’s department, the student must first attempt resolution within the department by following the department’s grievance procedure. If a mutually satisfactory resolution cannot be reached at the department level, the complaint may be brought to the Graduate School according to the following procedure.

3. Formal Appeal Procedure to the Dean of the Graduate School

Complaints must be initiated by a written statement from the student to the associate dean of students in the Graduate School, indicating the nature of the problem, the date(s) the problem occurred, the grounds upon which the appeal is based, background information that the student considers important and the relief requested. The associate dean will request from the department chair (or chair of the departmental appeal committee) a description of the results of the departmental resolution process.
Grounds for formal appeal include procedural error, violation of official policy by academic or administrative personnel, or special mitigating circumstances beyond the student’s control that were not properly taken into account in a decision affecting the student’s academic progress.

The complaint should be sent to the Graduate School’s associate dean of students within 30 days of the department’s resolution. The associate dean will then convene a meeting of an ad hoc academic appeals committee, composed of three faculty members chosen by the associate dean, two of whom will be current members of the Graduate Council (one from the student’s college and one from outside the student’s college) and one of whom will be from the student’s college but not a member of the Graduate Council. The committee will also include one non-voting graduate student. This student may either be one of the current GSU representatives to the Graduate Council or a substitute from the appellant’s college selected by the associate dean from a pool of students identified by the GSU. The committee will be chaired by the associate dean, who does not vote. At the student’s request or by request of the committee, the appeals committee will also meet with the student. The committee may also meet with other individuals involved.

The appeals committee will make a written recommendation to the dean of the Graduate School within 30 working days of receipt of the appeal. The dean may or may not accept this recommendation, but in either case, he or she will respond to the appeal in writing within 30 working days of receipt of the committee’s recommendation. (All deadlines set forth here may be extended in extenuating circumstances.) The dean will send a copy of this letter to the department chair. The judgment of the dean of the Graduate School is final. Students cannot register or enroll for subsequent semesters, including the summer session, during the appeal process.

The following quotes from summary information given to the DGS by the Graduate School:

On all matters concerning academic grievances originated by faculty or students, the initial recourse is through departmental mechanisms. (If a student is believed to have committed a violation of academic integrity, see the section on “Academic Integrity” in the Graduate School Bulletin. If a student believes he or she has been discriminated against or sexually harassed, see the procedures stated in du Lac.)

Students should be made aware of the available departmental mechanism for handling such grievances when they enter the department.

Departments should document communication with all students in academic trouble. The DGS or adviser should speak directly with the student, informing him or her of the nature of the problem, offering strategies to correct it, and identifying a deadline by which improvement must be made. This conversation should be followed up by a letter summarizing the expectations of the student. A copy of the letter should be placed in the student’s departmental file.

When a student who has had recourse to the departmental grievance procedure on academic matters believes that he or she has not received adequate consideration, he or she may appeal to the dean of the Graduate School.
**Department Policy: Problems**

Students should feel welcome to contact the DGS in the event that they experience difficulty in coping with the course work or other aspects of graduate student life. Likewise, instructors in graduate courses, research advisors, and research committees are urged to contact the DGS if they observe that a graduate student is having difficulties.

The DGS will help the student explore options for the resolution of these difficulties. In the event that the student has a conflict or problem with the DGS, he or she should bring the concern to the attention of the department chair.

**Department Grievance Procedures and Appeal Process**

In the event that a student has an unresolved complaint or grievance with the department, he or she may appeal in writing to the department chair and/or the DGS. The department chair (or DGS) will then appoint an ad hoc appeals committee of three faculty members to investigate the complaint. All faculty members on this committee must be unconnected factually with the case or reasons for appeal. This committee may include the DGS or department chair, unless the DGS/department chair has been involved in the case.

The student’s written statement should include details of the nature of the problem, the date(s) the problem occurred, the grounds upon which the appeal is based, background information that the student considers important, and the relief requested.

The appeals committee will promptly and thoroughly investigate the appeal to determine whether the relief requested is warranted. The investigation may include interviews and/or written statements from the student, any student witnesses, faculty or staff members who may be able to provide pertinent information about the facts, as well as a review of pertinent documents. In most situations, the appeals committee will complete the investigation in 30 business days (Note: Business days do not include weekends or employee holidays as recognized by the University.) There may be some reports that cannot be investigated within 30 business days. In such cases, the chair of the appeals committee will communicate to the student that the investigation is going to take longer than 30 business days and will also include a statement indicating when the committee anticipates completing the investigation. The DGS/department chair will notify the student in writing of his/her decision. If the DGS/department chair has been involved in the case, the notification will be from the designated chair of the appeals committee.
Part IV
Examinations and Research
Qualifying Examination

Students are required to pass a written qualifying examination on undergraduate physics prior to being invited to take the Ph.D. candidacy examination. This examination is in two parts. Each part will be offered once on different Saturdays in the fall and spring semester. Each failed part of the examination must be taken each time it is offered until the student has passed the entire qualifying examination. The student must pass both parts of the qualifying examination by the end of the second year of residence in order to continue in the program.

The first part of the examination contains questions similar to or from volume 1 of the text Physics by Halliday, Resnick, and Krane, 5th edition; the second part is based on volume 2 (extended) of the same text. These texts are available through the publisher, John Wiley and Sons (2002), ISBN 0-471-32057-9 and 0-471-40194-3. Some copies of these texts are also available on loan from the department.

Each part of the qualifier is a four-hour written examination. Each question is graded independently by two faculty members on a scale of 0.0-4.0, with 3.0 being a Ph.D. pass. Scores on the examination are reported to the DGS, who then notifies each student of his or her results.

On an initially experimental basis, in the summers of 2003-2005, a group of graduate students (those new students already resident in this country) were offered the chance to take a qualifier preparation course, PHYS 77031-77032. This course was not offered in 2006 but was offered to new domestic and continuing graduate students in 2007-2011. Students who participate in these courses were given one “free” chance to take a section of the qualifying examination. These examinations were given at the end of each course. Depending on interest, resources, and availability of faculty, this course may or may not be offered again. The course web site (which is accessible through the physics web site) contains generally useful information for studying for the exam including pdf copies of the equation sheets given to students with the exam.
Research Advisors and Co-Advisors

Research advisors are chosen from the list of the regular teaching and research (T&R) faculty of the department, including concurrent T&R faculty. A list of eligible faculty is posted on the student section of the department web site. Of course, the likelihood that someone on that list will accept a graduate student will depend on their research funding and activity level and their assessment of the qualifications of the graduate student.

It is expected that all students will make at least a tentative choice of a research advisor by the start of the second semester of graduate study. To facilitate the choice of a research advisor, in the fall semester, the DGS organizes a series of talks, the “research orientation seminars,” in which professors in the department describe their research to the first-year class. Attendance of this program is mandatory. Students are also encouraged to talk individually to professors about research opportunities in the group and future opportunities for research assistant positions. Recognizing the importance of the research advising relationship, the department requires the student and the advisor to commit to each other by signing a research advisor contract (Appendix B), which is given to the DGS for the department’s record. For first-year students, no research advisor contract may be signed until after the presentation of all of the research orientation seminars.

An increasingly common option is for the student to select two research advisors, or “co-advisors.” The two advisors may both be regular T&R faculty in the department, or may include one T&R faculty from the department plus a second researcher chosen from the physics research or emeritus faculty, from the faculty in another department or unit of the university, or a researcher chosen from outside the university. In the latter case, the external co-advisor must also be approved by the Committee on Advancement of Promotions (CAP). The DGS will initiate the approval process by requesting a CV and passing it on to the CAP. If a co-advisor is chosen, all parties (that is, both co-advisors and the student) must sign the research advisor contract.

Research advisor responsibilities include the suggestion of possible research problems and guidance and direction in the chosen problem. Research advisors will also advise the student on courses to supplement the required curriculum. They are expected to guide the student in professional development and to seek or provide the funding required to support the student (in the summer and also as soon as possible after the student’s course work is complete). Research advisors give feedback to the student through regular research meetings and grades in the research and dissertation course. If the student has co-advisors, the co-advisors will determine a system for jointly grading the student (e.g., a joint decision on the research grade or perhaps alternation of research sections between the two research advisors).

A frequent question with co-advisors concerns the roles and responsibilities of the two advisors. The following terminology is introduced to discuss this. At least one of the two advisors must be on the T&R faculty in the student’s department; this advisor is denoted the “home-department advisor.” The second advisor may also be a “home-department advisor,” but if the second advisor is not on the T&R faculty in the student’s department, then this person will be called an “external advisor.” A second designation, “primary advisor,” is used to denote the advisor
primarily responsible for the student’s research. The primary advisor is generally the one who provides office or laboratory space and funding to the student. Primary advisors can be either home-department advisors or external advisors. There is no requirement that a primary advisor be designated, that is, it can be the case that the co-advisors take near equal roles in supporting and mentoring the student. Questions of research attribution should follow normal standards in research, e.g., papers submitted to journals and presentations at conferences should only include those who were actually involved in the research work. The home-department advisor always must assume the role of making sure that academic requirements are completed by the student according to the rules of the department. An external advisor should clearly understand that the jointly shared student is a Physics graduate student, following the requirements and policies of the department as described in this guide, e.g., the student’s required physics curriculum should be completed before electives are taken from the external advisor’s department. Both co-advisors will be equal partners in the students written and oral candidacy exams and the PhD defense, e.g., both ideally would contribute questions to the written candidacy exam. Both advisors will sign the final dissertation, so both will need to be in support of the work presented in the dissertation. And if there is a recognized primary external advisor, then the student’s department chair may ask that advisor to assume responsibility for the support of the student, e.g., in the summer and after courses are complete. Clearly, both co-advisors should thoroughly discuss their roles before signing a co-advisor research contract.

The following are anticipated situations where the research contract may need to be re-negotiated or broken:

**Voluntary change of research advisors or research area by the student.** The initial choice of research area and an advisor by a student is considered to be somewhat tentative, requiring evaluation by all for an initial period of time. A six-month trial period is common; for theory students, the trial period might go through the end of the second year. If during this period, the student decides to change areas and/or advisors, common courtesy demands that the student first notify the current research advisor that they are thinking of a change. Changes of research advisor sometimes occur after the second year, but the new advisor and the student must both recognize that the student’s “clock” does not restart after the change; a prime consideration should thus be how to accomplish the change without impacting greatly the student’s time to degree. After the third year, if there is serious difficulty with a research advisor, a change can still be made, but a change of research groups will be problematic. It will be at the discretion of the DGS, chair, and new research advisor whether previous invitations to take candidacy or results of previous candidacy exams still hold for the new research situation. It is extremely important that funding opportunities be considered when making a change, since the department will not be obligated to provide support beyond what was promised when the student was first admitted. In all cases, after a new research advisor has been found, a new research advisor contract should be signed and filed with the DGS. The new research contract must include a releasing signature from the previous research advisor. This signature indicates that the change of research advisor has been discussed.

**Termination of a research advisor contract by a research advisor.** The research advisor contract implies significant responsibilities for the advisor, including mentoring in research and the securing of some sort of funding for that student (TA, RA, or fellowship). For the student,
the research advisor contract implies a work commitment and a sacrifice of time and energy for
the goal of obtaining research experience and an expected future PhD. So if there is a situation
where the research advisor contemplates the termination of the student’s contract, this must be
handled in a professional way. This includes a history of clear communication of expectations
by the advisor to the student. If there is dissatisfaction with the student’s research performance,
the student must be told how to improve and be given time to improve. It is recommended that
the research advisor document the warning in writing. If the student has not been performing
adequately in research, the student’s research grades should reflect this. If the advisor ultimately
decides to terminate the student, a notification of the breaking of the research advisor contract
must be given to the chair and the DGS so that the student’s future in the department can be
discussed.

The “Divorce” of Co-Advisors. Either the student or the co-advisors may decide to terminate
the co-advising contract. In the case that co-advisors decide to divorce, the first question to
address is which co-advisor assumes sole responsibility for the student. Generally, this will be
the primary advisor, but, of course, the student has a strong say in this. If the primary advisor is
also external, a breaking of the research advisor contract would then leave the student without a
home-department advisor. A solution to this dilemma is that the external advisor can request that
either the DGS or the department chair assume the role of the home-department advisor. It is
best if all “divorces” can be amicably solved, but if this is not possible, the organizational chart
of the university and its reporting lines will be used to find an arbitrator for the problem
(department chair, dean, or provost or perhaps an officer in the Office of Research).
Invitations to Candidacy

Students must be invited by the department to take the candidacy examination. The department requires that: (1) The student has a positive recommendation from the research advisor. (2) The student has passed both parts of the qualifying examination; (3) The student has completed the Ph.D. course requirements (Students who have completed almost all requirements except 3 credits of breadth course(s), will still be considered for invitation to candidacy, contingent on completion of the requirement.); and (4) The student have a grade point average (G.P.A.) of at least 3.000. A form (available through the department web site) gathers these four pieces of information from the advisor(s) (item 1) and the DGS (items 2 to 4).

Candidacy should be completed before the end of the fourth academic year. Students who, without good cause, delay taking the candidacy examination may find themselves without stipend or tuition support.

The invitation to candidacy form may be submitted to the DGS whenever the research advisor is ready to make a positive recommendation. If requirements (2) to (4) are not yet met, the DGS will inform the research advisor. Otherwise, twice a year (after fall and spring semesters), the DGS will use the data from these forms to generate a list of students to be considered for invitations to candidacy. Each semester, the DGS will set deadlines for submission of forms. Two email reminders will be sent to the faculty; one announcing the deadline; the other at least a week later reminding faculty that the deadline is approaching.

Next, the DGS will prepare the list of students and post that on a secure web site that is accessible to the T&R faculty. When complete, the DGS will email the T&R faculty asking whether anyone disapproves of any student on that list. A deadline is set (1 week) for negative responses. If there are any objections by any of the faculty, then discussion of the student is put on the agenda of the next faculty meeting (the research advisor in that case must be present at that meeting either in person or by telephone linkup). If no objections are registered in that one week period, then the DGS will write on behalf of the department inviting students to take their candidacy exam.
Research Committees

Once a student has been invited to take candidacy, it is time to assemble the student’s research committee. The DGS is responsible for asking faculty to serve on this committee. The research committee is generally the same as the oral candidacy examination committee. These faculty members will also normally be among the readers of the completed dissertation, and thus will also be the examination committee for the Ph.D. defense.

In assembling the research committee, the DGS also consults with the research advisor and the student on their preferences for faculty for the oral candidacy examination, and then makes the final choices of members. (Please also see discussion of the scheduling of oral candidacy exams, below.) A typical committee includes two faculty from the same research area as the advisor plus one faculty from outside the research area. For interdisciplinary students, one of the two faculty members from the student's research area can be from outside of the department. Committee members are normally chosen from the teaching and research (T&R) faculty of the university, although if approved by the department’s CAP, a faculty member from another institution may also be appointed to the committee. Students, in consultation with their research advisor(s), are allowed to exclude three faculty from consideration, similar to what is done with journals and the choice of referees. The advisor(s) and the student may suggest people who would be appropriate from the student's research area, but should do this in such a way that there remains a group for the DGS to choose among. In choosing the third member of the committee, every attempt will be made to balance research committee loads among the T&R faculty and also to spread membership among all the other research areas of the department.

For post-candidacy students, annual research committee meetings are required. These meetings should be scheduled by the student in the time period between spring break and the end of spring final exams. A sample form for reporting the results of this meeting is given in Appendix B (pdf and docx versions of the form are available through the department web site).
**Written and Oral Candidacy Examinations**

**The Written Examination**

The Ph.D. candidacy examination consists of two parts. The written examination is given first. This examination, which is four hours in length, is confined to the student's area of specialization. Once the candidate has completed the written examination, copies of the questions are given to the department and then made available to all faculty members and to interested graduate students. (Starting fall 2003, after a written examination is administered, a copy of that examination is filed in a notebook. This notebook is made available to students through the department office.) Each exam question is graded independently by two members of the T&R faculty on a scale of 0.0-4.0, with 3.0 being a Ph.D. pass. When complete, a report summarizing the procedures used and the grades on the exam should be sent by email to the DGS, for the department’s records. Results of the written examination are reported to the student by the research advisor.

**The Research Proposal**

Part of the preparation for the oral candidacy examination is the creation of the research proposal. Preparation of this document is viewed as an important part of the “professionalization” of the graduate student. Advisors and students should jointly work together to make sure that the research proposal reflects the student’s readiness to become a candidate for the Ph.D. degree.

The contents of this research proposal must be mutually agreed upon by the student and the research advisor. The research proposal should clearly and concisely state the research problem, the research methods to be applied for its resolution, anticipated difficulties (and techniques for coping with these), and conclude with a few citations to the relevant research literature. Since the fall 2003, copies of research proposals have been filed in a notebook available to students through the department office. Recent copies of research proposals are also made available to the department through the department office.

Sufficient time must be given to oral exam committee members (“research committee”) to review the research proposal in advance of the oral candidacy exam. In Department of Physics, this time period is 5 business days. (This is defined as the days when the office is staffed, that is, typically Monday through Friday excluding any official staff holidays.)
such as Christmas break, Good Friday, etc.) Students should give a copy of the proposal to the department at the same time that committee members receive their copy. The office will then publically post a copy of the research proposal on the department’s bulletin board.

Scheduling the Oral Candidacy Examination
Due to the active professional travel schedules of many of the physics faculty, it can be difficult to schedule the oral candidacy exam. The following are rules agreed to by the faculty.

The primary responsibility for scheduling a tentative date for an oral-candidacy exam lies with the graduate student. The tentative date should take into account the 5 business-day period for readers of the research proposal. There are various ways to schedule a tentative date. The student may do this through individual conversations or emails with the advisor(s) and committee. Another suggestion is to use an on-line poll to suggest dates to the advisor and committee. (The student should first exclude all officially scheduled teaching times, seminars, and colloquium, and then construct a poll that can be finished quickly by all participants.) A third option is to ask office staff to assist in scheduling.

The faculty have agreed that a one-week period is a reasonable time for a request for scheduling information from a student to a faculty member. Polite reminders of the request may be sent within this week, but if no information is forth-coming in the week on scheduling availability, then the student should involve his/her research advisor. The research advisor is then asked to contact committee members about their availability for an exam.

It is unreasonable to ask faculty to tie up their schedules for candidacy-exam dates too far in advance. A month in advance is reasonable. It is not reasonable to request to schedule multiple dates for an exam.

When a tentative time is agreed upon, the time, date, and place should be recorded with the graduate student coordinator. The date the proposal is due to committee members and the office is determined at that time.

The office is responsible for scheduling the oral candidacy exam with the Graduate School at least three business days ahead of time.

Other rules agreed to by the faculty:
If at all possible, candidacy exams should be scheduled during the academic year. And while occasionally candidacy exams may occur during the summer, students must understand that this requires agreement and cooperation of all committee members. If a summer candidacy exam appears to be a necessity for a student, then the constraint of faculty availability should be taken into consideration at the time of assignment of the student’s research committee.

If a faculty member commits to a particular date, it takes extraordinary circumstances to renege on this commitment. Examples include illness or family emergencies. In other circumstances, e.g., a forgotten or new conflict, the faculty member will need to arrange his/her own substitute from the T&R faculty. The DGS should be informed of the substitution.

Finally, oral candidacy exams should occur before the end of the fourth year. Note: This is a Graduate School rule. Failure to comply may result in termination of any funding from the Graduate School.

**Oral Candidacy Examination Format**

The oral examination takes approximately two hours (not less than 1.5 hours and not more than 2.5 hours). It starts with a 30-minute presentation by the student of the research proposal. The student or research advisor may invite guests to this presentation, but the guests are excused from the examination once the questions begin. The student is first questioned on the research proposal by the examining committee. General questions from other areas of physics will also be asked during a second round of questions during the oral.

Only one committee member is allowed to participate in the examination from a distance (e.g., by web cam or teleconferencing). Arrangements for distance participation must be cleared in advance of the examination with the DGS.

The purpose of the oral candidacy examination is to certify that the student has sufficient command of background material and techniques to ensure successful completion of the proposed dissertation. The oral examination is voted upon (pass/fail) by the four-member examining committee immediately after the examination, with a simple majority deciding the outcome of the pass/fail vote. If the committee has five members (e.g., including the
co-advisor), four votes are required to pass. A passing of this examination constitutes approval of the dissertation proposal. After the exam is over, committee votes are reported on a recording form; the department office then sends this form to the Graduate School.

In case of failure in either or both parts of the doctoral candidacy examination, the department chair, on the recommendation of a majority of the examiners, may authorize a retake of the examination. An authorization for retake must be approved by the Graduate School. A second failure results in forfeiture of degree eligibility and is recorded on the candidate’s permanent record.

The following quotes from the Graduate School web site:

Overview – Oral Candidacy Examination

The oral candidacy examination may serve several purposes. In part, it tests the candidate’s readiness for advanced research in the more specialized area(s) of his/her field. It may also be comprehensive. Successful passage indicates that, in the judgment of the committee, the candidate has an adequate knowledge of the basic literature, problems, and methods of his/her field to proceed to a dissertation. If the proposal defense is part of the oral exam, it should be a defense of a proposal and not of a completed dissertation.

Prior to the examination, committees should review departmental regulations for the conduct of the exam, the process of the exam, and voting procedures. Before the exam begins, they should inform the candidate of the process of the exam. After completion of the examination, the candidate should be asked to leave the room. Discussion of the candidate’s performance should then commence, with the committee ultimately voting on whether that performance merits a passing or failing grade. On a board of three, two votes are required to pass. On a board of four, three votes are required to pass. If a department chooses to have five members, four votes are required to pass. A written report of the results of the voting is sent immediately to the Graduate School by a member of the committee, normally the adviser.

In case of failure, the department chair, on the recommendation of a majority of the examiners, may authorize a retake of the examination if this is permitted by departmental regulations. An authorization for retake must be approved by the Graduate School. A second failure results in forfeiture of degree eligibility and is recorded on the candidate’s permanent record.

A candidate has the right to appeal the result of the exam to the Dean of the Graduate School on procedural grounds only, not on its substance or on his/her performance. If a retake is granted, an outside monitor appointed by the Graduate School must be present.

**Admission to Candidacy**

Once the student has satisfactorily completed all course requirements, and passed the written and oral candidacy examinations, the student is admitted to candidacy. A student who has not completed the physics breadth requirement before taking the candidacy
examinations will not be formally admitted to candidacy until this requirement is complete.

Admission to candidacy for a physics graduate student implies that all formal requirements for the Ph.D. have been completed with exception of the dissertation.

Admission to candidacy is a prerequisite to receiving any graduate degree. To qualify for admission to doctoral candidacy, the student must: Have provided proof of the conferral of an undergraduate degree; be in a doctoral program; have been continuously enrolled in the program; be in good standing; have passed the written and oral parts of the doctoral candidacy examination.

There is a form for applying for admission to candidacy. The department office prepares this form for the Graduate School after the oral candidacy examination has been passed.

A Ph.D. student who wishes to receive a M.S. degree must also apply for admission to master’s degree candidacy. The department office can also prepare this form after the oral candidacy examination has been passed. The same form is also required for those students who wish to terminate with the M.S. degree (see Part I of this guide.)
Doctoral Dissertation and Defense

Doctoral Committee
The DGS will appoint a dissertation committee consisting of the dissertation director (a.k.a., the research advisor) and three readers. Normally, the committee is drawn from the membership of the student’s oral candidacy committee and is the same as the student’s research committee.

In the event that the candidate’s dissertation director departs the University, an additional co-director (co-advisor) from among the regular teaching and research faculty will be appointed to the dissertation committee. In exceptional circumstances, the department, by faculty vote, may recommend to the Graduate School that the former faculty member remain the sole advisor. Note, co-directors cannot serve as readers, so if there are co-directors, the student’s committee’s size is increased by one in number.

The Reading of the Dissertation
The physics faculty have agreed that readers need sufficient time to read the thesis. The following has been agreed to by the faculty.

The dissertation is one of the most important documents that a Ph.D. physicist ever writes. The copy that is submitted to the readers should be a near final copy of the work. Specifically, readers are not expected to be editors of the thesis, so the copy that they review should have already been edited for spelling and grammatical mistakes. The research advisor(s) should also have approved the release of the dissertation to the readers.

Reading a dissertation is a serious responsibility for the faculty reader, taking a significant amount of time. The Graduate School suggests that readers be given a two- to four-week period to read and approve/reject a dissertation. The physics faculty discussed this requirement and agreed that the time period for physics should be set to 15 business days. (This is defined as the days when the office is staffed, that is, typically Monday through Friday excluding any official staff holidays such as Christmas break, Good Friday, etc.)

The office is responsible for setting the clock on the 15 business-day reading period. To clarify, suppose a student delivers a dissertation to readers on a Wednesday. The count starts on the next day, Thursday. If there are no official holidays in the time period, then the readers have through the Wednesday three weeks later to read the dissertation and decide whether it is approved or rejected. Readers should all be given a copy of the dissertation on the same day, in the format that each prefers (electronic or hard copy). For purposes of setting the clock, the office needs to receive an electronic copy on the same day.

Readers should not be given multiple drafts of the dissertation during the reading period. A reader has the right to ask the 15 business-day clock to be reset to 0 if students present a new draft or chapter(s). An insufficiently edited dissertation may also be returned to the student, again resetting the 15 business-day clock for the readers.
Scheduling the Defense

Due to the active professional travel schedules of many of the physics faculty, it can be difficult to schedule the defense. The following rules have been agreed to by the faculty and are similar to those for the oral candidacy exam.

The primary responsibility for scheduling a tentative date for a defense lies with the graduate students. The tentative date is based on the 15 business-day reading period plus the three business-day for scheduling with the Graduate School. There are various ways to schedule a tentative date. The student may do this through individual conversations or emails with the advisor(s) and committee. Another suggestion is to use an on-line poll to suggest dates to the advisor and committee. (The student should first exclude all officially scheduled teaching times, seminars, and colloquium, and then construct a poll that can be finished quickly by all participants.) A third option is to ask office staff to assist in scheduling.

The faculty have agreed that a one-week period is a reasonable time for a request for scheduling information from a student to a faculty member. Polite reminders of the request may be sent with this week, but if no information is forth-coming in the week on scheduling availability, then the student should involve his/her research advisor. The research advisor is then asked to contact committee members about their availability for the defense.

It is unreasonable to ask faculty to tie up their schedules for defense dates too far in advance. A month in advance is reasonable. It is not reasonable to request to schedule multiple dates for a defense.

When a tentative time is agreed upon, the time, date, place, and title of the dissertation should be recorded with the graduate student coordinator. The coordinator will not schedule the defense with the Graduate School until all signed readers’ reports have been received. Readers must make a decision on whether they sign the form by 15 business days after receipt of the dissertation.

Also agreed upon by the physics faculty were the following policies regarding defense scheduling:

Many of the physics faculty are involved in research both off-campus and abroad. The summer time is the prime season for scheduling experiments elsewhere. It is also the time when faculty takes vacation. It should thus not be expected that the faculty will want to commit days in their summer schedule to a student defense! It is fine to try to schedule a defense in the summer, but it will take far more flexibility on the part of all committee members than during the academic year.

The department expects that the committee assigned at the time of oral candidacy will continue to track the student’s progress through the defense. Thus, every scheduling effort should involve attempting to schedule a defense at a time convenient to all advisors and members of the committee.
Exceptions to this policy can exist, e.g., the illness or unavailability (e.g., due to sabbatical) of someone on the committee or a particularly awkward convergence of conflicts in proposed times of the defense. First, the student should explore conducting the defense with one faculty member present by “virtual link.” If this does not work, then the student may request the replacement of someone on sabbatical. During the academic year, the responsibility for a sabbatical replacement lies with the DGS. During the summer, the responsibility for organizing a replacement lies with the student and research advisor, in consultation with the DGS. Every attempt should be made to keep the substitutes to just one.

If a faculty member commits to a particular date, it takes extraordinary circumstances to renge on this commitment. Examples include illness or family emergencies. In other circumstances, e.g., a forgotten or new conflict, the faculty member will need to arrange his/her own substitute from the T&R faculty. The DGS should be informed of the substitution.

**Doctoral Defense Format**

In defending the dissertation, the student supports its claims, procedures and results. The defense is the traditional instrument that enables the doctoral candidate to explore with the dissertation committee the dissertation’s substantive and methodological force. In this way, the candidate and the committee confirm the candidate’s scholarly grasp of the chosen research area.

The format of the defense is determined by the department with the Graduate School’s approval. At the defense, the student starts by giving a 30 minute presentation of his or her research. The time and location of the first 30 minutes of the defense will be advertised, with the talk open to all interested parties. Guests are excused from the defense once the questions begin. The student will be questioned on the research by the dissertation committee. A dissertation defense must last at least 1.5 hours and end before 2.5 hours. After the examination is completed, the chair calls for a discussion followed by a vote of the dissertation committee. At least three votes out of four will be required to pass a candidate, and four votes on a five-person committee. The chair sends a written report of the overall quality of the defense and the voting results immediately to the Graduate School. After the exam is over, committee votes are reported on a recording form; the department office then sends this form to the Graduate School.

Only one committee member is allowed to participate in the examination from a distance (e.g., by web cam or teleconferencing). Arrangements for distance participation must be cleared in advance of the examination with the DGS.

In the case of failure of the defense, on the recommendation of a majority of the examiners, another opportunity to defend may be authorized. An authorization for a second defense must be approved by the Graduate School. A second failure results in forfeiture of degree eligibility and is recorded on the candidate’s permanent record.
The following quotes from the Graduate School web site:

Overview – Defense of the Doctoral Dissertation

The purpose of a dissertation defense is to offer the doctoral candidate an opportunity to support the claims, procedures, and results of the dissertation. The defense is the traditional instrument that enables the candidate to explore with the committee the dissertation’s substantive and methodological force. In this way, the candidate and the committee confirm the candidate’s scholarly grasp of the chosen research area and original contribution to knowledge.

Dissertation defenses will not be allowed to proceed until all reader’s reports have been received in the Graduate School at least two business days before the defense takes place.

Prior to the defense, committees should review departmental regulations for the conduct of the exam, the process of the exam, and voting procedures. Before the exam begins, they should inform the candidate of the process of the defense. After completion of the examination, the candidate should be asked to leave the room. Discussion of the candidate’s performance should then commence, with the committee ultimately voting on whether that performance merits a passing or failing grade. On a board of three, two votes are required to pass. On a board of four, three votes are required to pass. If a department chooses to have five members, four votes are required to pass. A written report of the results of the voting is sent immediately to the Graduate School by a member of the committee, normally the adviser.

In case of failure, the department chair, on the recommendation of a majority of the examiners, may authorize a retake of the defense if this is permitted by departmental regulations. An authorization for retake must be approved by the Graduate School. A second failure results in forfeiture of degree eligibility and is recorded on the candidate’s permanent record.

A candidate has the right to appeal the result of the defense to the Dean of the Graduate School on procedural grounds only, not on its substance or on his/her performance. If a retake is granted, an outside monitor appointed by the Graduate School must be present.
Submission of the Doctoral Dissertation

Before a Ph.D. student can submit his or her dissertation to the Graduate School office, he or she must have successfully defended it. Even though the dissertation has been approved for defense, revisions may be required. If defects in the dissertation come to light at the defense, the student may be asked to revise the dissertation before it is accepted by the Graduate School and the degree is conferred. In that case, it will be the responsibility of the research advisor(s), or such person as the defense committee may appoint, to report to the Graduate School that such revisions have been completed satisfactorily.

Formatting and submission instructions, forms and links are available via the Current Students page at http://graduateschool.nd.edu.

The Graduate School will check dissertations to ensure that they conform to the UMI guidelines for formatting. (See the Graduate School website for details.) Beyond these minimum requirements, the Graduate School requires that students use the formatting guidelines of their discipline. Since the Department of Physics does not yet have its own established formatting guidelines, the department will continue to follow the guidelines in the Graduate School’s Guide for Formatting and Submitting Dissertations and Theses. The Guide, plus a sample LaTeX document, are available at the Graduate School office or through its web site.

It is required that the student submit a printed or PDF copy of the dissertation to the Graduate School for a preliminary format check well in advance of the deadline, optimally at the same time he or she delivers copies to the readers. The student must comply with the formatting requirements listed in the ProQuest booklet, “Publishing Your Doctoral Dissertation with UMI Dissertation Publishing” Additional formatting guidelines are available in the Graduate School’s “Guide for Formatting and Submitting Dissertations and Theses.”

One print-quality PDF of the dissertation must be submitted to the Electronic Thesis and Dissertation (ETD) website (http://etd.nd.edu) by the date listed on the Graduate School calendar. Along with the required submission fees and forms, the student must also submit two printed title pages with his or her adviser's original signature. The date at the bottom of the title page must match the month and year of formal submission to the Graduate School.
Graduation

Three times a year, the DGS constructs the graduation list in consultation with the research advisors and the graduate students. The graduation list includes those who are expected to graduate with a master’s degree, those receiving a master’s degree and continuing on as Ph.D. candidates, and the names of those who expect to defend their Ph.D.

Deadlines for the graduation list are posted on the Graduate School’s web site. If deadlines are missed, then typically the graduation date shifts to the next semester (or to summer session).

The following quotes from the Graduate School:

**Graduation List**
Requests for graduation lists are sent out to the departments three times a year.

The Registrar's Office posts the graduation list on its website. Students are expected to check the site to verify that all graduation information (name, hometown, degree, adviser) is correct.

**Commencement**
Commencement is held once a year, in May. Students who graduate in August and January may participate in Commencement exercises and are included in the Commencement program in May. Graduate degrees are awarded during the Graduate School ceremony, but students may also attend the University ceremony if they wish.

**Graduate School Requirements**
The following is a list of Graduate School requirements that must be met in order to be eligible for graduation: Submission of an original undergraduate transcript (or diploma for international students) showing conferral of an undergraduate degree; enrollment and registration for at least 1 credit hour during the semester of graduation (or for a zero-credit course, during the summer session); a cumulative GPA of at least 3.0; no “I” grades in any course during the final semester of a terminal degree; accumulation of the minimum number of courses required for graduation in the department; accumulation of the minimum number of credit hours required for graduation in the department; passage of the oral candidacy exam (for PhD students); submission of two reader’s reports for the master’s thesis, and at least two for the doctoral dissertation; passage of the master’s comprehensive exam (if applicable) or the dissertation defense by the deadline posted on the Graduate School calendar; submission of an admission to master’s or doctoral degree candidacy form; submission of one PDF copy of the final version of the thesis or dissertation, along with two original signed title pages, relevant forms and fees, on or before the final submission deadline prior to the graduation date.
Appendix A: Transfer Credit

The Department of Physics makes the following distinction between the transfer of credit and the waiver of a requirement:

Transfer credits are entered by the Registrar's Office onto a graduate student's University transcript. The awarding of transfer credits by the University is a formal acknowledgment that a student has previously taken graduate course(s) that can count in the place of Notre Dame graduate course(s). The awarding of transfer credit follows rules established by the Graduate School and the University. This is the normal and preferred mechanism to be used by the department to indicate the acceptance of a core course requirement taken elsewhere.

On occasion, and as an exception, a student may request that a requirement in the Physics core curriculum be waived. This will occur when the student believes that he or she has a course background equivalent to one of the Notre Dame core courses, but the course taken does not meet the requirements for transfer credit. In this case, the student may ask the department to waive the requirement of the course. If a waiver is granted, the record of this waiver is maintained by the DGS. No record of the waiver appears on the student's University transcript.

Transfer Credit Evaluation

The following applies to incoming graduate students to Physics who have already taken one or more graduate courses elsewhere.

For a course to be eligible for transfer:

- The student must have had graduate student status when he or she took the course;
- The course must have been completed within a five-year period prior to admission to the physics degree program;
- Grades of "B" or better must have been achieved;
- It must be a graduate level course.

Additionally:

- If student is transferring from an unfinished master’s program, the student will not be allowed to transfer more than six semester credit hours into a Notre Dame Physics Ph.D. program;
- If student has completed a master’s or Ph.D. program, the student will not be allowed to transfer more than 24 semester credit hours to the Notre Dame Physics Ph.D. program.

The above is a partial summary of the transfer-credit rules of the Graduate School and the University (see the Graduate Bulletin of Information for more complete information).

The Department of Physics' role in transfer credit decisions is to make recommendations on the suitability of a graduate course as replacements for Notre Dame's physics core course requirements.
**Review Process**

At the time of student’s orientation to the department, an initial meeting will be scheduled with the DGS. Prior to that meeting, the DGS will have reviewed the student’s transcript in order to generate the list of possible transfer courses.

The student and the DGS will decide together which courses should be reviewed for possible transfer credit. The student may decide to forgo the transfer credit and take the Notre Dame course.

The student then makes an appointment with a designated recent professor(s) of the course(s). A list of these professors will be made available at orientation. This “review panel of professors” is responsible for making recommendations for particular courses in the Notre Dame physics core. The review panel professor will evaluate the suitability of the course taken as replacement for one of the physics core requirements.

The professor will ask to examine material related to the course taken, e.g., the syllabus, textbook, and tests taken as part of the course. The professor may ask the student to answer orally basic questions on the material studied in the course. If the student is unable to answer these questions satisfactorily, then the course will not be transferred.

The professor will report his or her recommendations on transfer credit back to the DGS. Final decisions on courses to be taken in the fall and on courses to be transferred will be made by the DGS after a second discussion with the student. The DGS has the responsibility of making the department's recommendations on transfer credit to the Graduate School. At the end of the fall semester, the DGS forwards transfer credit recommendations to the Graduate School.

**Waiver of Required Course**

As described above, at the time of the student’s arrival in the department, the DGS will have reviewed the student’s previous transcripts looking for courses that are eligible for transfer credit. If the student believes that he or she has course background equivalent to one of the Notre Dame core courses, but the course taken does not meet the requirements for transfer credit, then the student may request that a requirement be waived.

After a discussion with the student, the DGS will send the student to the appropriate member of the review panel for transfer courses. The professor will evaluate the suitability of the course as a replacement for one of the Physics core requirements. If there appears to be a good match, then the professor will arrange to give a written exam comparable to past finals in the course. This final will be graded on a scale of pass/fail. There are no allowed retakes of this exam. A report of the grade and a recommendation on the waiver will be made by the professor to the DGS.

The student must discuss possible waivers of credit with the DGS before contacting any of the faculty on the review panel.

Written examinations on first-semester courses must be taken before the fourth class day, and graded before the sixth class day. Written examinations on all other core courses must be taken and graded before the end of the first semester.
The DGS maintains discretion on the number of courses that may be waived for a particular student. Generally, for students following a Ph.D. program, no more than six courses will be waived. If a student following the Ph.D. program has a combination of waived and transferred courses, the total of the two categories generally will not exceed eight courses (or 24 credits).

Similar restrictions on waived and transferred courses exist for master’s students. A student may not transfer more than six credits or two courses towards a Notre Dame master’s degree. Additionally, for master’s students, the combination of waived and transferred courses will not be allowed to exceed two courses (or 6 credits).
Appendix B: Department Forms

Physics Research Advisor Contract

 Physics Research Advisor Contract

The signatures below indicate an agreement between a physics graduate student and research advisor (and, if appropriate, co-advisor) for a trial period/renewal [pick one] of ___________ months.

Initial commitment: Potential research directions and the possibility of future support as a research assistant for the next summer and after class work or after candidacy exams should have been discussed.

Renewed commitment: Indicates that the advisor(s) expect(s) there to be a likelihood that the student will be eventually invited to take candidacy with them.

Student: ____________________________________________
(Name) (Date) (Signature)

New or renewed agreement

Research Advisor: _________________________________________
(Name) (Date) (Signature)

Co-Advisor: _____________________________________________
(If applicable) (Name) (Date) (Signature)

Release from previous agreement (if a change)

Research Advisor: _________________________________________
(Name) (Date) (Signature)

Co-Advisor: _____________________________________________
(If applicable) (Name) (Date) (Signature)

_____________________________________________________

Return to the DGS for the department’s record
Department of Physics Pre-Candidacy Review Form

(Draft of the form being developed by the department)

Name:       No. academic years completed:

Advisor:      Co-Advisor:

Qualifying examination status:

Courses to date:

Stipend support to date:

TA ratings, if applicable:

Progress towards taking the candidacy exam:

Comments
From advisor(s):

From DGS:

From course instructors:
(First- and second- year students)

From student:

Student goals for next year
Courses:

Teaching:

Research:

Other (e.g., plans for exams such as qualifier or candidacy, professionalization
goals, fellowships, etc.):

________________________________________________________________________

Signatures (attests that this report has been discussed and distributed to the student)

Advisor ________________ Date ___  Co-advisor ________________ Date ___
DGS ________________ Date ___  Student ________________ Date ___

Department of Physics Post-Candidacy Review Form

(word and pdf versions of this are available on the department web site)
Research committees should meet at least once per year for post-candidacy students, generally in the time period from spring break to the end of final exams for the spring semester. At least two of the three committee members should be at this meeting. The following are suggested topics for discussion:

1. Research progress (attach a C.V. with landmarks such as papers, conferences, summer schools)
2. Research roadblocks (if any)
3. Goals for the next year, research
4. Goals for the next year, professionalization
5. Expected time to finish the Ph.D.

Advisor(s)’s comments:

Committee member(s) comments:

Student comments:

Goals for next year:

Signed (attesting to the meeting of the committee and accuracy of comments listed above)

Advisor ___________________ Date ___ Co-advisor ____________ Date ___
Comm 1 _________________ Date ___ Comm 2 _______________ Date ___
Comm 3 _________________ Date ___ Student _______________ Date ___