

PhD STUDENT HANDBOOK

USU Physics Department

(Updated March 12, 2008)

Introduction

Each graduate student is responsible to be knowledgeable about the policies, regulations, and procedures of the School of Graduate Studies and of his or her department or program. This handbook is designed as a resource for planning and guiding students through their graduate careers. It is not intended as a substitute for frequent meetings between the student and the Physics department faculty and staff, especially with the Department Advisor, Temporary Advisor, Graduate Student Tracking Committee, the student's major professor, and/or Graduate Supervisory Committee.

This handbook is divided into the following sections.

- Utah State University PhD Program General Requirements
- Physics Department PhD Program Requirements and Guidelines
- Candidacy Examination Requirements and Guidelines
- Candidacy Exam Checklist and Presentation Guidelines for the Student
- Physics Department Forms
 - Application for Qualification (AQ)
 - Intent for Candidacy (ICE)

Utah State University PhD Program General Requirements (Summarized from the USU General Catalog)

The Utah State University General Catalog is the most complete source of information on PhD requirements. It may be found online at <http://www.usu.edu/generalcatalog>. This section of the handbook summarizes some of the most important information found in the General Catalog. Keep in mind that if a conflict exists between the information found in this handbook and the General Catalog, the General Catalog is the authoritative source.

I. FULL TIME STATUS

- Acceptance by the Department with the concurrence of the Graduate Dean
- 9 semester credits; or
- 6 credits if employed as a graduate assistant for 15 or more hours a week (.375 FTE); or
- 3 credits the semester of dissertation defense, or with all coursework done and only completion of the thesis or dissertation remaining.
- 9 semester credits required for doctoral tuition waiver.

II. CREDIT REQUIREMENTS

- 90 credit hour minimum.
- 60 credit hours beyond MS degree.
- 33 USU credit hour minimum; 3 semesters full-time USU registration, at least 2 consecutive semesters.
- Up to 12 credit hours post master's degree obtained prior to USU matriculation may be transferred from another accredited institution (18 quarter credits).
- "B" average or better .
- Class credits must be revalidated if more than 8 years have elapsed before completion of degree.

III. WRITTEN AND ORAL REQUIREMENTS

- A written dissertation on the student's research must be completed.
- An oral defense of the research must be completed.

IV. SUPERVISORY COMMITTEE

- When the area of research is established, the student and department head meet to establish the Graduate Supervisory Committee that consists of a chair and a minimum of four members.
- The chair is the student's major professor.
- The minimum committee personnel are to be resident faculty members of USU on the graduate school's approved list of supervisory committee members.
- At least one should be from a different department.
- At least one should be from a different research area within the department.
- The Graduate Supervisory Committee Approval form must be signed by the department head and forwarded to the graduate school for the Dean's approval.
- Any changes in the committee must be made with another form submittal (a minimum of 6 weeks prior to dissertation defense).
- Continuation from an MS program to the PhD program may use the same major professor.
- The student must see his/her major professor on a regular basis to review student progress.

V. PROGRAM OF STUDY FORM

- The Program of Study form must be submitted under the signature of the Supervisory Committee when the coursework plan is established, generally by the end of the 3rd semester. This form contains the verification of writing competency.

VI. APPLICATION FOR CANDIDACY

- The Application for Candidacy form should be completed and signed by the committee
- Verification of meeting departmental requirements.

- Verification of writing competency.
- Verification of having passed Physics Department Candidacy Exam.
- A dissertation proposal signed off by all committee members should accompany the candidacy form.
- The candidacy form must be submitted at least three months prior to the dissertation defense/final examination.

VII. DEFENSE

- No changes in the supervisory committee are allowed during the 6 weeks prior to defense.
- The appointment for examination must be submitted to the Graduate School no later than five working days prior to the defense.
- The whole Supervisory Committee must attend the defense and sign the Record of Examination Completion form.
- Failure to complete degree requirements within one year of the defense will require the student to re-defend.

VIII TIME LIMIT

- All work for the PhD degree should be completed within eight years of entry into the program or coursework will have to be revalidated.

Physics Department PhD Program Requirements and Guidelines

I. INTRODUCTION

The purpose of this document is to help students and faculty understand the requirements associated with the Physics Department's PhD program. Section II summarizes the steps involved in obtaining the PhD degree. Sections III - XII describe each aspect of the PhD program in detail. The information in this document describes Physics Department requirements for PhD students and elaborates upon the general Graduate School requirements that are found in the University Catalog and the preceding section. If a conflict exist between the information found here and the General Catalog, the General Catalog is the authoritative source.

II. SUMMARY OF THE PHYSICS PhD PROGRAM

The PhD program consists of the following elements, in roughly chronological order:

- (a) Matriculation and an initial advisement meeting with the department advisor (DA), Temporary Advisor, and/or the Graduate Tracking Committee (GTC) to determine courses to be taken and thus place the student in either the Standard Track or Advanced Track.

- (b) Continued advisement/tracking through the, GTC, DA, and TA or major professor (throughout the student's time at USU).
- (c) A set of 9 required core courses and a Program of Study to be filed with the Graduate School.
- (d) Colloquium (attendance) requirement.
- (e) Qualification, which primarily consists of an evaluation of the student's performance in physics graduate courses taken in the first year of the Advanced Track.
- (f) Establishment of the student's major professor and Supervisory Committee.
- (g) A research-format Candidacy Examination.
- (h) Research with the student's major professor, including the dissertation proposal, actual research, writing of the dissertation, presentation of two public research seminars, and defense of the dissertation.

III. MATRICULATION AND INITIAL ADVISEMENT

Matriculation into the program will include placement of the student into one of two tracks, the **Standard Track** or **Advanced Track**. The placement process consists of an initial advisement meeting with the DA and/or with the GTC. **This initial meeting should take place in the week before the start of classes.**

IV. CONTINUED ADVISEMENT AND TRACKING

The purpose of continued advisement and tracking is to make sure that the student is satisfactorily progressing toward a Physics PhD degree. Advisement and tracking of the graduate students takes place continually while the student is in the program. Before the student has established his/her Supervisory Committee the majority of advising is done by the DA and/or temporary advisor. After establishment of the Supervisory Committee the primary advising role falls naturally on the student's major professor. In order to help ensure that the student is making satisfactory progress the GTC will meet with each student on at least a yearly basis, typically early in the Fall semester. **These meetings are mandatory for each student.** If the student is located away from the university during the fall semester, a phone interview with the GTC will be conducted.

V. DEGREE TRACKS

After the initial advisement meetings with the DA, TA, and GTC the student should have a plan of course work for their first year, and will thus be admitted to either the Standard or Advanced Tracks. In the standard track the student will take in his/her first year the undergraduate courses Phyx 4550 - Advanced CM, Phyx 4600 - Advanced Electromagnetism, and Phyx 4700 and 4710 - QM I and II. Since graduate students cannot take 4000 level courses for credit, they will sign up for these courses under Phyx 5500 - Intermediate Topics in Physics. Some additional work will be required beyond the 4000 level courses in order to make the course suitable for the 5000 level. (Additional work may be something like a term paper or a class lecture or presentation not required of the undergraduate students). **Provided that the student obtains a B or better in each class**, the student will be admitted to the Advanced Track, as described below. If it is determined that a student only

needs undergraduate work in one or two areas (such as CM and/or QM, e.g.), he/she will still be considered a standard-track student during their first year.

In the Advanced Track the student will start off with the 5000 and 6000 level physics courses described in Sec. VI.

VI. PhD COURSES AND ASSOCIATED REQUIREMENTS

A. Required Courses

A total of 9 courses are required of all PhD students (see Table I). The required courses are: 5340, 5350, 6010, 6110, 6210, and 6410; one State of Matter course; and two courses in Advanced Topics. Taking any one of 6330, 6530, or 6930 can fulfill the State of Matter requirement. The specifics of the Advanced Topics requirements (two courses) are delineated in Table I.

Table I. Courses required for the physics PhD program.

Required of all students (9)	Courses to fulfill requirement
Methods Theoretic Physics I and II (2)	Phyx 5340 and 5350
Classical Mechanics I (1)	Phyx 6010
Electrodynamics I (1)	Phyx 6110
Quantum Mechanics I (1)	Phyx 6210
Statistical Mechanics I (1)	Phyx 6410
A State of Matter I (1)	one of Phyx 6330, Phyx 6530, or Phyx 6930
Advanced Topics (2)	chosen from Phyx 6020, 6120, 6220, 6420, 6340, 6540, or 7500; Phyx 6310 and 6320 may be substituted for space science students; Phyx 6550 and 6560 may be substituted for condensed matter students; Phyx 6910 and 6920 may be substituted for theory students

B. Time Requirements for PhD Courses

Once a student has entered the Advanced Track, he/she is required to take at least two of the courses required in Section VI (A) each semester until the 9-course requirement is fulfilled. The Department strongly encourages students to complete all 9 courses in the first two years after they are admitted to the Advanced Track.

C. Grade Requirement for PhD Courses

A minimum B average ($GPA \geq 3.0$) is required in the PhD courses listed in Section A. **A GPA < 3.0 in the first two years of the Advanced Track will constitute an automatic fail of the Candidacy Examination.**

D. Possible Waiver of Course Requirements

Students who have previously taken courses at another institution that are equivalent to courses required in Sec. VI (A) may (1) ask to have their Supervisory Committee petition the graduate school to transfer up to 12 credits as part of their Program of Study (see Sec. X below) and/or (2) ask that the previously taken courses fulfill appropriate course requirements in Sec. VI. A.

Any such waivers should be preliminarily approved by the DA, TA, and GTC upon entering the graduate program.

E. Program of Study

A Program of Study form must be filled out and filed with the Graduate School. This form is filled out with help from the DA, the student's temporary advisor, and/or the student's major professor. **It must be filed with the Graduate School by the end of the student's fourth semester in the Advanced Track, otherwise an automatic fail of the Candidacy Examination is recorded.**

VII. COURSE TEACHING SCHEDULE

In Table II a typical plan for teaching the courses required for the PhD program is illustrated. The six specific courses (5340, 5350, 6010, 6110, 6210, 6410) that are required for all students will normally be taught yearly. Typically, one State of Matter course (6330, 6530, or 6930) will also be taught yearly. Advanced Topic courses will be offered as needed. This schedule, which may change depending upon departmental needs, is presented here so that the student and department advisors can effectively plan the student's Program of Study. **Note that student input will have a large impact on the specific courses that are offered as State of Matter and Advanced Topics courses.**

Table II. Typical teaching schedule

Fall	Spring
Methods Theoretical Physics I (5340)	Methods Theoretical Physics II (5350)
Classical Mechanics I (6010)	Quantum Mechanics I (6210)
Electrodynamics I (6110)	Statistical Mechanics I (6410)
State of Matter (6330, 6530, or 6930)	Advanced Topic (<i>as needed</i>)
Advanced Topic (<i>as needed</i>)	

VIII. COLLOQUIUM ATTENDANCE REQUIREMENT

Each student is required to pass the Physics Colloquium Course, Phyx 5800, for four consecutive semesters, beginning with the first semester after matriculation. Satisfactory completion of four semesters of this course is normally required before the student is allowed to take the Candidacy

Exam (see Section XI below). In the event that the student takes the Candidacy Examination before the end of his/her fourth semester in the Advanced Track, he/she is still required to fulfill the four-consecutive-semester colloquium attendance requirement.

In the event that a student's tuition waiver required 9 credits of course work, and the student is fulfilling those 9 credits with approved coursework, the student must still fulfill the colloquium requirement during that semester, even though no credit will be received.

IX. QUALIFICATION

Each student enrolled in the PhD program will be evaluated for qualification for PhD work. Generally, consideration of qualification will occur during the **3rd semester** of the Advanced Track. Evaluation will be based on whatever relevant information the student wishes to have presented on his/her behalf (coursework, research, TA performance, GRE, etc.), but must include faculty evaluation of coursework in physics for courses taken at Utah State. Normally, the student should present the results of at least four physics courses. **Students admitted to the PhD program with considerable coursework from another institution and who have not taken four courses in physics during their first year in the advanced track at Utah State may be asked to present a Qualification Seminar to the Department on research they have done during the preceding year at Utah State.** Based on the various pieces of information presented on behalf of the student, the Department will make a judgment of whether the student is qualified to continue in the PhD program. If not, a student already having an M.S. in physics from USU will be asked to leave. A student without an M.S. in physics from USU will be invited to continue to finish an M.S. Upon completion, the student can re-apply to the PhD program, but acceptance will be contingent on the evaluation of the student's graduate work to that point. **A standardized *Application for Qualification Form* must be submitted to the faculty by the student before the Faculty meet to discuss the student's qualification.**

X. STUDENT'S SUPERVISORY COMMITTEE

The student's Supervisory Committee consists of a major professor (who usually is the main advisor to the student during the research phase of PhD degree) and at least four other faculty members. The student's Supervisory Committee is the key connection between the student and the student's successful completion of the PhD degree.

The basic procedure regarding the student's Supervisory Committee is outlined as follows:

- (1) The student chooses a major professor **by the end of the third semester** in the Advanced Track.
- (2) The student forms the committee **no later than the end of fourth semester** of the Advanced Track and holds several meetings, if needed. These meetings may concern transfer of credit or waiver of certain course requirements as discussed in Sec. VI. (D).
- (3) The Committee approves the Program of Study, which must be filed with the Graduate School.
- (4) The Committee selects the specific material to be the focus of the Candidacy Examination.
- (5) The student prepares a Dissertation Proposal, which must be approved by the supervisory Committee. (Following approval, the Dissertation Proposal and Application for Candidacy form are filed with the Graduate School.)

- (6) The Committee, especially the major professor, mentors the student in his/her dissertation research.
- (7) The Committee reads the dissertation and participates in the student's Dissertation Defense Examination.

Many of the above steps require that a form be submitted to the School of Graduate Studies. These forms can be found at http://www.usu.edu/graduateschool/apply/current_forms.cfm.

XI. CANDIDACY EXAMINATION

The Candidacy Exam consists of a 45-minute oral presentation followed by a 30-minute oral examination period that is attended by the Physics Department faculty and the outside member of the Supervisory Committee. It shall normally take place during the 5th semester of the advanced track. Requirements and guidelines for the exam can be found in a later section of this document.

XII. RESEARCH PROGRAM

The major component of the PhD degree is the undertaking of original research. Usually this occurs as part of the Major Professor's overall research program, but often has significant input from the student with regards to the scope and direction of the research. There are four formal components associated with this aspect of the student's program, as discussed in the following subsections.

A. Dissertation Proposal

The first stage of the research process is to become acquainted enough with a specific area of research that a Dissertation Proposal can be drafted and submitted to the student's Supervisory Committee. Part of this acquaintance may come via preparation for the Candidacy Examination. **The Dissertation Proposal must be approved by the student's committee and filed with the Graduate School along with the associated Application for Candidacy form. Approval of the Dissertation Proposal should occur no later than the end of the third year of the Advanced Track.**

B. Research with the Major Professor

After approval of the Dissertation Proposal (or some modified version) the student should focus on his/her research project. Completion of the research project can take anywhere from one to four years, typically. Utah State University has a policy of 8 years maximum for completion of the PhD degree from the date of matriculation.

C. Seminar Requirement

The Physics Department requires each PhD student to present at least two research seminars associated with his/her research (neither of which can be the Candidacy Examination oral presentation).

One of these is associated with the Dissertation defense (see below). The other seminar can be a local seminar given to members of a local research group, a presentation at a regional, national, or international conference, or an invited talk at another institution.

D. Dissertation and Defense

After completion of the research the student is required to write a dissertation on the research. **As part of the Dissertation Defense, a public seminar on the material in the dissertation will be presented.** Immediately following the public seminar, the dissertation is defended before the student's Supervisory Committee.

Candidacy Examination Requirements and Guidelines

I. PURPOSE OF THE EXAM

The Candidacy Exam is the Physics Department's last evaluation of the student's suitability to pursue a PhD degree. It has been designed to provide the department some evaluation of the student's ability to participate in the world of physics research. The exam does this by having the student study the research literature on a particular physics topic, educate the Physics faculty about that topic in a seminar setting, and answer physics questions from the faculty pertinent to the presentation.

II. ORAL EXAM PREPARATION

It is suggested that the student schedule two to three months of preparation time for the oral examination. The summer between the student's 4th and 5th semesters is a natural time for exam preparation.

A. Setting the Topic

In the 4th semester that the student is in the Advanced Track the student's Supervisory Committee shall set, in writing, the research topic to be explored. The PhD candidate, the major professor, and Supervisory Committee may all participate in the topic selection process. That is, there are no constraints on who chooses the topic as long as the committee ratifies it unanimously.

However, the topic is constrained by the following: (1) The topic should **not** be material that is normally taught at a 6000 or 7000 level. (2) The topic should **not** be esoteric to the point that the majority of the USU Physics Department is unable to participate in the Exam. Assessment of this guideline is the responsibility of the Supervisory Committee. (3) The topic can, **but need not**, be a future aspect of the candidate's research.

The Supervisory Committee plays a key part of the student's preparation for the Candidacy Exam. In addition to setting the topic, the committee is responsible for helping the student understand the difference between course based learning and research, the latter being the topic of the Candidacy Exam. The candidate may discuss his/her readings and thoughts as often as necessary with the major professor and committee in preparing the oral presentation.

At the time that the topic is set by the committee, the student will give the signed *Intent for Candidacy Exam* form (ICE form) to the Department Advisor. The form must be signed by all Supervisory Committee members.

B. Prerequisites for the Oral Exam

In order to be allowed to proceed with the oral part of the Candidacy Exam the student must meet the following prerequisites

1. A minimum of 8 of the 9 PhD required courses as outlined in Section VI must be completed.
2. A minimum 3.0 GPA in these courses.
3. Qualification at the PhD level.
4. Fulfillment of the colloquium attendance requirement.
5. A Program of Study on file with the Graduate School.

If all 5 of these prerequisites have been met, then with the help of the Department Advisor the student will see to the scheduling of the oral exam. **Seven days before the oral exam the Department Advisor will distribute the student's *Candidacy Exam Intent Form*, along with the scheduled date and time of the oral exam, to all Physics faculty and Supervisory Committee members.** The optional written summary should also be distributed to the faculty at this time. The student may then proceed with the oral examination.

C. *De-Facto* Failure

Failing to meet any of the above prerequisites by the end of the student's 4th semester in the Advanced Track will constitute a *de facto* failure of the student's first attempt at the Candidacy Exam, at which point the faculty will be required to consider the student's progress in the program. The student may be given the opportunity to take the Exam at a later date or may be asked to leave the program.

V. ORAL EXAMINATION

A. Overview

The oral exam shall normally take place at the beginning of the fifth semester that the student is in the Advanced Track. The Physics Department faculty-meeting time slot (3:30 p.m. on Thursdays during the Fall or Spring semester) is the standard time for these examinations, and the exam is normally held in the Physics/CASS conference room.

Visual aids of the standard type are acceptable – viewgraphs, slides, or computer-aided presentations. A white board is available in the conference room. In the case of a handicapped candidate, the department will comply with all Federal regulations and common sense.

B. Written Summary (optional)

As part of the examination, the candidate *may* prepare a written summary of the proposed talk for the faculty. The summary may be used by the faculty in assessing the student's performance on the exam. The summary should be between 5 and 10 double-space pages, plus appropriate figures, figure captions, and references. The major professor and committee may **not** write nor rewrite any parts of the written summary. However, if the committee finds the summary unsatisfactory, they may certainly guide the student in improvements to the written document.

C. Exam Performance Criteria

The faculty present are to make their judgments based the oral presentation, written summary (if provided), responses to the questions, and the interfaculty discussion. In order to help the faculty assess the students performance on the exam, it is suggested that the faculty judge the exam using the following 5 criteria:

- (1) The talk had a proper balance of introductory and in-depth material.
- (2) The level of the talk was appropriate for all faculty present.
- (3) The candidate demonstrated mastery of the material presented, **especially an understanding of the physics germane to the topic.**
- (4) The presentation contain assessment, discussion, conclusions, and summaries that represent the candidates own interpretation of the subject.
- (5) The quality of the written summary (if provided) is sufficiently high.

D. Quorum

This oral exam requires a quorum of faculty members to be present. A quorum consists of the following:

1. The student's major professor.
2. The Supervisory Committee external member.
3. Two of the remaining three Supervisory Committee members.
4. The chairperson of the exam, who is normally the Department Head. The Assistant Department Head **must** substitute for the Department Head if the Department Head is the student's major professor. The Assistant Department Head **may** substitute for the Department Head if the Head is unavailable.
5. Three other physics faculty members.

To ensure that a quorum is available, tenured and tenure-track faculty are required to attend if they are not on travel leave. The quorum is hence 8 faculty members with balanced graduate-committee and general-faculty representation. If the exam chairperson is on the student's supervisory committee, then the quorum consists 7 faculty members. The exam chairperson may not be the student's major professor.

E. Exam Format

Only Physics Faculty, the student's Supervisory Committee, and the candidate may attend the oral examination.

The oral exam itself consists of four parts:

1. **An uninterrupted 45-minute talk by the candidate on the subject set by the Supervisory Committee.** The student begins the oral part of the exam by making an **uninterrupted** 45-minute presentation. The one exceptional interruption will be a "three-minute" warning by the Exam Chairperson, so that the candidate may make concluding remarks.
2. **A 30-minute period of questions from the faculty addressed directly to the candidate.** At the end of 45 minutes, which will be the maximum time allotted by the chairperson, a 30 minute question session begins. Questions must be germane to the subject presented by the student, and **must be directed at the student** only. The chairperson will control the time permitted for each faculty member's questions. At exactly the 1 hour, 15 minute mark the formal exam is over and the student leaves the room.
3. **A 15-minute discussion among the faculty to clarify the performance of the candidate** during the talk question and answers periods (1 and 2 above). The discussion is limited to the student's performance on the exam. Thus, the discussion may not pertain to other aspects of the student's performance in the PhD program.
4. **An anonymous *pass/fail* vote by the faculty.** Each faculty member in attendance then marks a secret pass/fail ballot that is immediately given to the chairperson. **All faculty present are required to vote either pass or fail.** The chairperson tallies the ballots and informs the faculty and student of the result before the 1 hour, 35 minute mark. A **majority** of passing votes or a **tie vote** is required to pass the exam.

F. Exam Failure

A student can fail their first attempt at the Candidacy exam by (1) a de-facto failure (as described above) or (2) by a failing vote of the faculty. The task of the faculty is then to decide the student's fate, which may include another attempt at the exam or expulsion from the graduate program.

Candidacy Exam Checklist and Presentation Guidelines for the Student

I. CHECKLIST

1. During the 4th semester of Advanced Track, meet with Supervisory Committee to set the exam topic. **Make sure that all prerequisites for taking the oral exam are on track.**
2. Submit ICE form to Department Advisor. (This must be done **immediately** after the topic is set.)
3. Schedule 2 to 3 months for exam preparation.
4. Work with Department Advisor to schedule oral exam. This should occur during the 5th semester of the Advance Track.
5. Make sure that ICE form with time, date, and place of oral exam is distributed **7 days** in advance of the exam.
6. Get a good night's sleep before the exam!

II. ORAL PRESENTATION GUIDELINES

1. For the oral presentation use 15 – 20 minutes for introductory material and 25 – 30 minutes for in-depth discussion.
2. When using viewgraphs or slides for the oral presentation, make sure that each one has on it exactly what you want. **Try to base a 45-minute talk on no more than 15 viewgraphs.** Often the best talks have the fewest viewgraphs.
3. Your job is to educate the faculty on your assigned topic, of which you should be the expert. The level should be that of a good colloquium, not a high-powered research seminar.
4. Do not introduce any material that you do not understand or cannot defend. **Anything** is fair game for questions.
5. The pass/fail judgment of the exam will be based upon the oral presentation, answers to questions following the oral presentation, and the written summary (if provided).

6. The faculty may judge the oral exam against the following criteria:

- (1) The talk had a proper balance of introductory and in-depth material.
- (2) The level of the talk was appropriate for all faculty present.
- (3) The candidate demonstrated mastery of the material presented, **especially an understanding of the physics germane to the topic.**
- (4) The presentation contain assessment, discussion, conclusions, and summaries that represent the candidates own interpretation of the subject.
- (5) The quality of the written summary is sufficiently high.

Physics Department Forms

The next four pages contain two Physics Department form germane to the PhD program. The first is the **Application for Qualification** form, which is two pages long, and the **Intent for Candidacy Exam** form, which is also two pages long.

Application for Qualification Form (AQ)

1. To be filled in prior to Qualification attempt by Department Advisor with input from student and temporary advisor or major professor.
2. Attach graduate and undergraduate transcripts, recommendation letters (if requested), etc.

Candidate:

Date of Matriculation:

Advisor:

Date of Qualification Application:

GRE Scores

Date	Verbal	Analytical	Quantitative	Physics Subject

Graduate Record Prior to USU Physics

University	Major	Years Attended	GPA	Degree

Graduate Core Courses

Course	Semester	Instructor	Grade
Phyx 5340 – Meth Theor Phys I			
Phyx 5350 – Meth Theor Phys II			
Phyx 6010 – Classical Mech I			
Phyx 6110 – Electrodynamics I			
Phyx 6210 – Quantum Mech I			
Phyx 6410 – Stat Mech I			
State of Matter			
Adv. Topics I			
Adv. Topics II			
Core GPA			

Other USU Graduate Courses

Course	Semester	Instructor	Grade
Total USU Graduate GPA			

Teaching and/or Research Assistantship Positions

Position	Supervisor	Semester(s)	Notes

Any other Relevant Details:

Previous Qualification Attempt? Yes No : Date:
Action Taken:

of this Qualification Attempt: Pass Fail **Result**

Remarks:

Department Head Signature:

Date:

Intent for Candidacy Exam Form (ICE)

1. Page 1 to be filled in, signed by Supervisory Committee, and filed with Physics Department Advisor immediately after Exam topic is set.
 2. Pages 1 and 2 filled in and distributed to faculty 7 days in advance of oral exam.
-

Candidate:

Date:

Assigned Topic:

Statement of Exam Topic to Student (1 paragraph)

5 Relevant References

Supervisory Committee Signatures

_____ (chair)

Candidacy Exam Announcement

Candidate:

Date, Time, and Place:

I, the Department Advisor, verify that the candidate has met all 5 prerequisites (*8 required courses, 3.0 minimum GPA, Qualification, 4 semesters colloquium attendance, and Program of Study on file*) for taking the Candidacy Exam.

(signature)

Suggested Criteria and Score Sheet for Judging Exam

Criteria	Scoring				
	strongly agree	agree	neutral	disagree	strongly disagree
The talk had a proper balance of introductory and in-depth material.					
The level of the talk was appropriate for all faculty present.					
The candidate demonstrated mastery of the material presented, especially an understanding of the physics germane to the topic.					
The presentation contain assessment, discussion, conclusions, and summaries that represent the candidates own interpretation of the subject.					
The quality of the written summary is sufficiently high. (<i>A written summary is not required.</i>)					

Notes

Vote: Pass Fail
