

# North Carolina State University Physics Department

## PhD Academic Requirements

	Physics Department	Graduate School
<b>Exams</b>	<b>Departmental Exam</b> undergrad level: qm, cm, e&m, GRAD LEVEL: QM1, E&M1	<b>Preliminary Exam</b> No later than end of 4 <sup>th</sup> year <b>Final Defense</b> at completion of research
<b>Core Classes</b>	<b>4 &gt; PY700 including:</b> QM2, SM, & (E&M2 or CM) Not counting PY781 and 785	None
<b>1 hr, 1<sup>st</sup> yr Classes (S-U)</b>	PY801 Seminar (2 semesters) PHI816 Research Ethics	None
<b>Electives, minor classes</b>	4 non-core $\geq$ PY500 —— OR —— 4 in 3 departments including: non-core $\geq$ PY 500, $\geq$ XX400, $\geq$ YY400 —— OR —— 4 in 3 departments including: $\geq$ XX500, $\geq$ YY400, $\geq$ ZZ400 —— OR —— 4 $\geq$ XX400	None
<b>Completion Class (S-U)</b>	PY895.001 for $\geq$ 1 hr	None
<b>Total hours Graded/S-U</b>	24/4	72

Notes:

- **A grade of B or better is required for the course to count towards departmental requirements**
- Departmental Exam is offered over three afternoons in early January.
- Core class requirements may be fulfilled by exam at discretion of instructor and approval of the DGP.
- The 72-hour graduate school requirement includes the 28 hours required by the department.
- Completion class required only of students in their sixth year.
- Four core class requirements do not include QM1 or E&M1.

# North Carolina State University Physics Department

## Academic Degree Requirements\* Doctor of Philosophy

### A. Graduate School requirements

#### 1. Minimum of seventy-two hours of graduate work.

This may include courses in the physics department at the 500-level or above and approved courses at the 400-level or above in other departments. These hours must include:

- a. at least 18 hours of credit earned in continuous semesters' residence;
- b. no more than 18 transfer hours of credit from a Master's degree from a university other than NC State;
- c. no more than 36 transfer hours of credit from a Master's degree from NC State;

#### 2. A preliminary comprehensive examination (written and oral components)

#### 3. A final comprehensive oral examination

#### 4. A dissertation

### B. Physics Department requirements

#### 1. Designation of a Research Director and an Advisory Committee

The committee must approve of the student's plan of graduate work, or POGW, and dissertation. They must certify that the student has successfully passed the preliminary and final oral examinations. If the student opts for a minor, one committee member must come from the department/s represented by the minor.

#### 2. A POGW that includes:

- a. no minor and 12 hours of PY courses not including those in #3 below, or
- b. a minor of 12 hours in one non-physics department, or
- c. an interdisciplinary minor of 12 hours in three departments; plus
- d. four physics courses at the 700-level or above including PY782, PY721, and either PY783 or PY786 and not including PY781 and PY785; plus
- e. two semesters of PY801; plus
- f. one semester of PHI816; and
- g. one semester of PHY899.001 (for students in their 6<sup>th</sup> years).

#### 3. Successful completion of the written departmental examination which covers the subject matter of undergraduate classical mechanics, electricity & magnetism, and quantum mechanics; plus graduate material covered in electricity and magnetism (PY785) and quantum mechanics (PY781) courses. The examination is given just before spring semester classes start.

*\* This document is meant as a simplified guide. Please refer to the NC State Graduate Administrative handbook for a complete description of degree requirements.*