PHYS 9000 – Doctoral Thesis

CRN: 83687
Section: 9000
Semester: Fall 2026

Instructor: Prof. Xueda Wen
Department: School of Physics, Georgia Institute of Technology
Email: xueda.wen@physics.gatech.edu
Office Hours: By appointment

Course Description

This course supports doctoral candidates in the development and completion of their Ph.D. thesis research. Students will conduct original research under faculty supervision, working toward significant and publishable contributions to their field.

The course includes regular advising meetings, research progress evaluation, and preparation of thesis-related materials.

Prerequisites

- Admission to Ph.D. candidacy
- Approval of thesis advisor

Course Objectives

By the end of the semester, students will:

- Make substantial progress toward completion of their doctoral thesis
- Develop original research results of publishable quality
- Demonstrate mastery of relevant literature and research techniques
- Communicate research effectively in written and oral forms
- Prepare for dissertation writing and defense

Course Structure

This course is individualized and research-focused, typically including:

- Weekly or biweekly meetings with the advisor
- Independent research activities
- Participation in seminars or group meetings

Expectations

Students are expected to:

- Dedicate full-time effort to thesis research (commensurate with credit hours)
- Maintain consistent and measurable research progress
- Engage actively in discussions with advisor and collaborators
- Adhere to professional standards of research and ethics
- Keep clear documentation of research activities and results

Milestones (Flexible)

Depending on the student's stage, expected milestones may include:

- Development or refinement of research questions
- Completion of key calculations, simulations, or experiments
- Drafting of thesis chapters or research papers
- Submission of manuscripts to peer-reviewed journals
- Preparation for proposal or defense (if applicable)

Assessment and Grading

Component	Weight
Research Progress	50%
Engagement and Participation	20%
Written Work (Drafts / Papers)	20%
Presentations / Reports	10%

Grading Scale: Satisfactory (S) / Unsatisfactory (U) or A–F, depending on departmental policy.

Deliverables

Deliverables will vary depending on the stage of research, but may include:

- Written progress summaries
- Drafts of thesis chapters
- Research papers or preprints
- Oral presentations (group meeting or seminar)

Academic Integrity

Students must adhere to the policies of the Georgia Institute of Technology regarding academic honesty, including proper citation, authorship standards, and responsible conduct of research.

Professional Development

Students are encouraged to:

- Attend seminars, workshops, and conferences
- Engage with the broader research community
- Develop skills in writing, presentation, and collaboration

Flexibility Statement

Research progress is inherently non-linear. Expectations and milestones may evolve depending on research developments. Evaluation will emphasize sustained effort, intellectual growth, and progress toward thesis completion.