UCONN Physics Department
Grad Handbook

DEPARTMENT STRUCTURE

Administration

George Gibson
Department Head
Gant South 120C
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Carlos Trallero
Associate Department Head for Graduate Studies
Gant South 311
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Peter Schweitzer
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Lea Ferreira dos Santos
Associate Department Head for Administration
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Administrative Staff

Micki Bellamy
Academic Advisor
Gant South 120E
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Monitors graduate student progress; provides support on issues such as course registration, plans of study, submission of dissertation proposal, and dissertation defenses.

Carrie Cichocki
Educational Program Assistant
Gant South 120G
Carrie.cichocki@uconn.edu

Assists with graduate admissions; responsible for Graduate payroll (Teaching Assistantships, Research Assistantships, fellowships and Summer Research Awards; summer payroll). This includes stipend level increases and handling payroll discrepancies working with UConn Payroll Department. Drafts letters of support for I-20 extensions. Assists new grads with the onboarding process including providing payroll information, check distribution, directions, etc.

Kaitlin Dalessio
Adam Kolano
Financial Assistants
Gant South 120F
Kaitlin.gorman@uconn.edu
adam.kolano@uconn.edu

Responsible for: All reimbursements, travel related questions and tasks (booking travel arrangements), making purchases, booking rooms, disbursing announcements, and summer payroll.

Teaching Lab Staff

Diego Valente

Director of Physics Undergraduate Teaching Laboratories
Assistant Professor in Residence
Gant South 205
Diego.valente@uconn.edu

Oversees Teaching Laboratory Operations. Responsible for TA assignments and scheduling of laboratory courses each semester. Hires out of department TAs. Ensures TA assignments are within TA workload guidelines as set by the university. Runs the TA Orientation session at the start of each semester and oversees the TA training program. Oversees curriculum and pedagogy development for several introductory lab courses. Provides support and guidance to Graduate TAs in issues involving questions about pedagogy and policy in the introductory laboratory courses and how to handle unique situations with students. Mediates potential situations of conflict between Graduate TAs and lab students. Develops and ensures departmental introductory laboratory course policies are followed by Graduate TAs teaching these courses. Supports Graduate TAs in the investigation and handling of potential plagiarism cases within their laboratory courses. Runs the Marshall Walker Graduate Teaching Assistant award each year.

James Jaconetta

Laboratory Technician
Gant South 206
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Aislinn Daniels

Laboratory Technician
Gant South 207
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Hannah Morrill

Laboratory Technician
Gant South
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Responsible for providing lab curriculum and lab technical support for Graduate Teaching Assistants with lab assignments. Other responsibilities include assisting the TA Orientation session at the start of each semester and leading weekly training sessions for course-specific labs. Conducting safety training for graduate TAs throughout the semester and ensuring TAs enforce lab safety guideline requirements with

their lab students. Setting up, taking down, and troubleshooting of lab equipment each week. Supporting instructional technology in the labs. Handling of student inquiries outside the scope of the curriculum, such as lab re-schedule requests, and assisting in the investigation of potential plagiarism of student lab reports. Ensuring standards for final grade submissions at end of semester are met.

University Offices

Graduate School https://grad.uconn.edu/contact/
Phone: 860-486-3617

Office of the Bursar https://bursar.uconn.edu/
Phone: 860-486-4830

Office of the Registrar https://registrar.uconn.edu/
Phone: 860-486-3331

Connecticut Partnership Plan Health Benefits https://hr.uconn.edu/ct-partnership-health-benefits/

Counseling and Mental Health Services https://counseling.uconn.edu/
Phone: 860-486-4705

CMHS offers a variety of services, including:

- Community workshops and events
- Consultation drop-in services
- Campus and community referrals
- Individual and group therapy
- Medical evaluations
- Alcohol and other drug services

Office of Institutional Equity https://equity.uconn.edu/title-ix/

Title IX is a federal law that prohibits discrimination based on the sex (gender) of employees and students of educational institutions that receive federal financial assistance. Title IX's prohibition of sex discrimination includes prohibition of sexual harassment and sexual violence.

The Associate Vice President of the Office of Institutional Equity serves as the Title IX Coordinator. Anyone with questions or concerns can contact the Title IX Coordinator by telephone: 860-486-2943; email equity@uconn.edu; or in person: 241 Glenbrook Road, Unit 4175, Storrs, CT 06269-4175, Wood Hall.

Center for Students with Disabilities https://csd.uconn.edu/
Phone: 860-486-2020

The mission of the Center for Students with Disabilities (CSD) is to enhance this experience for students with disabilities. The goal of the CSD is to ensure a comprehensively accessible University experience where individuals with disabilities have the same access to programs, opportunities and activities as all others. The Center is also committed to promoting access and awareness as a resource to all members of the community.

The CSD collaborates with students, faculty, family members and the greater UConn community to ensure a comprehensively accessible environment. They engage in an interactive process with each student and review requests for accommodations on an individualized.

Helpful Links

Registrar FORMS https://registrar.uconn.edu/forms/

UConn Graduate Employee Union https://uconngradunion.org/
uconngradunion@gmail.com

Graduate Catalog https://gradcatalog.uconn.edu/
The Graduate Catalog is your constitution and guide in all university matters of policy.

Physics MS requirements:

Per graduate school rules MS in Physics requires a total of 30 credits. The students require a minimum GPA of 3.0 in all courses in the plan of study for matriculation with MS in physics. There are two tracks:

Non-Thesis MS: 4 courses from the core list (below), plus 6 others either from the core list or advanced courses at discretion of the major advisor.
Thesis MS: 4 courses from the core list (below), plus 3 others either from the core list or advanced courses at the discretion of the major advisor. 9 credits of MS level research classes (GRAD 5950, GRAD 5960) must be included, plus a written and orally defended MS thesis.

Physics PhD requirements:

Per graduate school rules, the students who enter the program with BS degree, the PhD plan of study requires 30 credits, and, the students who enter the program with MS degree, the PhD plan of study requires 15 credits.

Coursework: Four courses from the core list (below), plus six others either from the core list or advanced (5000 or higher level) physics courses (including from other Departments, such as Polymer Physics, Chemistry, School of Engineering) at the discretion of the major advisor. Students must obtain a grade of B or better in each of at least four of the core courses, by the end of their fifth semester. Exceptions may be made for students with an MS in Physics who have already taken equivalent courses (and obtained transfer credit for these courses) at other institutions, obtaining a grade of B or better. The Graduate Affairs committee makes these decisions, at the request of the advisor. First year students are required to take 2 semesters of the one-credit Graduate Seminar course (PHYS 5094). The students require a minimum GPA of 3.0 in all courses in the plan of study for matriculation with PhD in physics.

PhD General Examination: Oral examination: short (~30 minutes) oral presentation on a research topic chosen in consultation between the student and their advisory committee, followed by an oral exam probing the student's physics knowledge underlying their presentation. Students must satisfy the core coursework requirement before taking the PhD General Examination (i.e. obtain a grade of B or better in four courses from the core course list). The general exam committee consists of the student's three-person advisory committee, plus two other faculty members from a different research field. The General Examination should be completed before the end of the student's fifth semester.

Dissertation Proposal: By the end of their third year, all PhD students must have an Advisory Committee and work on their Dissertation Proposal (details and form at the Graduate School website): the written proposal must be approved by the student's Advisory Committee, including an oral defense of the proposal before a committee composed of their Advisory Committee and two other Faculty examiners.

Graduate School Research Credits: In addition to the Physics PhD course requirements listed above in item 1, the student's PhD degree must include at least 15 credits of dissertation credits: GRAD 6950 or GRAD 6960.

Additional General Requirements

In addition, the following requirements apply to all students entering the Physics graduate program.

1. Progress Form: each year, each student must complete, in consultation with their faculty advisor, a Physics Graduate student progress form.

2. Plan of Study: to be completed for MS students no later than the beginning of the final semester, and for PhD students no later than when 18 credits of course-work have been completed. (These are also Graduate School requirements).

3. Colloquium and Seminars: All Physics Graduate Students are expected to attend the Departmental Colloquium, and, to participate in the regular research seminars in the department.

4. A Safety exam is required of all graduate students; a Shop Course is required for use of the Physics Machine Shop, and Laser Safety Training for students using lasers. All beginning graduate students are required to attend the computer information workshop and orientation on computer use and security.

5. There is no foreign language requirement for the Physics MS and PhD degrees.

Core course list:
5101 Methods of Theoretical Physics
5201 Theoretical Mechanics
5301 Electrodynamics I
5302 Electrodynamics II
5350 Computational Physics (existing course to be renamed)
5401 Quantum Mechanics I
5402 Quantum Mechanics II
5403 Quantum Mechanics III
5500 Statistical Mechanics
6730 General Relativity

Illustrative examples of a possible course curriculum for various groups: these can be adjusted

Example PAN student course curriculum:
Semester 1: 5101 Math Methods + 5201 Mechanics + 5094 (Grad Seminar)
Semester 2: 5401 QM I + 5301 E&M I + 5094 (Grad Seminar)
Semester 3: 5402 QM II + 5500 Stat Mech
Semester 4: two of: Comp. Phys., Gen. Relativity, QMIII, E&M II, QFT I, Nuclei & Particles

Example AMO student course curriculum:
Semester 1: 5101 Math Methods + 5201 Mechanics + 5094 (Grad Seminar)
Semester 2: 5401 QM I + 5301 E&M I + 5094 (Grad Seminar)
Semester 3: 5402 QM II + 5500 Stat Mech
Semester 4: two of: Comp. Phys., atomic, molecular, QMIII, E&M II, quantum optics, lasers, Semiconductor optical devices

Example CMP student course curriculum:
Semester 1: 5101 Math Methods + 5201 Mechanics + 5094 (Grad Seminar)
Semester 2: 5401 QM I + 5301 E&M I + 5094 (Grad Seminar)
Semester 3: 5402 QM II + 5500 Stat Mech
Semester 4: two of: Comp. Phys., QMIII, E&M II, solid state, CMP I, polymers, NMR

Example ASTRO student course curriculum:
Semester 1: 5201 Mechanics + 6710 (Stars) + 5094 (Grad Seminar)
Semester 2: 5401 QM I + 6720 (Galaxies) + 5094 (Grad Seminar)

Semester 3: 5500 Stat Mech + 6740 (Observational Astrophysics)
Semester 4: 5301 E&M I + 6730 (General Relativity and Cosmology)

Example GEO student course curriculum:
Semester 1: 5101 Math Methods + 5201 Mechanics + 5094 (Grad Seminar)
Semester 2: 5401 QM I + 5301 E&M I + 5094 (Grad Seminar)
Semester 3: 5402 QM II + 5500 Stat Mech
Semester 4: two of: Comp. Phys., E&M II, or from geosciences courses

Progress Reports

Each year Physics Department graduate students, together with their advisor, are required to fill out and submit the Graduate Student Annual Progress Report. The purpose of the form is to assist both the faculty and graduate students in monitoring degree progress and making clear future plans.

The procedure for completing the progress report is intended to be a conversation between the student and advisor. The process begins in the fall with the department sending the Progress Report Form via email to all physics graduate students. The report is cumulative, with updates added each year.

- Each graduate student must update sections 1 through 4 of the progress report form and send it to their advisor of record.
- Each graduate student's advisor of record must update section 5 of this form and send it back to the student.
- The student and advisor must arrange a meeting to discuss the contents of the form.
- After this review meeting, student and advisor should make edits to their sections as necessary. **The advisor should then submit the form via email to the Physics Department Head's office (send to Micki) by January 31st**, with the email copied to the student and the student's associate advisors, if any.

The forms will be reviewed by the department head and the associate department head for graduate affairs. If progress milestones are not met, or if any of the advisors or student do not approve of the form's contents, the department head and the associate department head for graduate affairs will meet with the student and/or advisors to discuss the student's progress to their degree.

Plan of Study

Doctoral Plans of Study must be submitted to the Graduate School no later than when 18 credits of coursework have been completed (during a student's third semester). The fillable pdf form can be found on the Office of the Registrar's webpage, under Forms https://registrar.uconn.edu/forms/

Things to keep in mind when filling out your Plan of Study:

1. The “Field of Study” is Physics; there is no “Area of Concentration.”
2. Listing your coursework – the Plan of Study is a PLAN; it includes the coursework you have completed, as well as the coursework you will complete to satisfy your degree requirements.
3. Degree requirements include:
    a. For post-bachelor’s degree 30 credits of graduate level content coursework (credits that do not have a GRAD designation); for post-MS 15 credits.
    b. Four courses from the core list, plus 6 others either from the core list or advanced courses (including from other Departments, such as Polymer Physics, Chemistry, School of Engineering) at the discretion of the major advisor.
    c. At least 15 credits of GRAD 6950 (maximum of 9 credits per semester).
4. Physics has no foreign language requirement, and no relateds requirement.
5. The Plan of Study is a PLAN and subject to change. After it has been submitted and approved, changes can be made with the Request for Changes in Plan of Study form (for example changing an Associate Advisor, or coursework).

MS on the way to PhD

Students receive an MS on the way to their PhD when three things are completed:

1. Pass the General Exam
2. Complete 30 credits of content coursework (PHYS courses, not GRAD)
3. Have a fully approved plan of study

Defending Your Dissertation:

Information regarding preparing for your defense can be found at https://registrar.uconn.edu/doctoral-degree-programs/dissertation-information/

Your defense committee requires five members: your advisory committee plus two additional faculty. Begin coordinating date/time/faculty members as soon as possible.

Two weeks prior to your defense date there are two things you need to do for the Graduate School:

1. Announce your oral defense in the **University Events Calendar** at least two weeks before the date of your defense.

2. **Email** the working copy of your dissertation to your Advisory Committee member *at least two weeks* prior to the date of the oral defense.

One week prior to your defense date there are two things you need to do for the Physics Department:

1. Email your committee and remind them about your defense date and time (***if you don't… they might not show up***).

2. Email your abstract, the date, time and location of your defense to Adam Kolano adam.kolano@uconn.edu AND kaitlin.gorman@uconn.edu and ask them to send out your defense announcement to the department via the email distribution list.

After the Defense:

Submit your Defense and Final Thesis/Dissertation Approval

Complete and submit the Survey of Earned Doctorates completion certificate.

Submit ONE electronic copy of your dissertation to Submittable. Follow the instructions found in the Submittable help file.pdf.

Financial Support Opportunities

Teaching assistantship (TA): (duties: up to 20 hours per week)

Criteria: academic merit, progress towards degree, competence as teacher; English language certification is required for international students). Students must be in good academic standing with a GPA of 3.0 or higher, and must be making satisfactory progress towards their degree.

In order to be considered for TA support after the first year in the graduate program, international graduate students must obtain certification of English proficiency according to the UConn International Teaching Assistant Program). Only in exceptional circumstances will TA support be given beyond the first year if these tests have not been passed.

Teaching Assistantships: 5 year limit. In applying for TA financial aid from the Physics Department beyond the first 5 years, students must document progress towards their degree and present a concrete proposal for a timely completion of their degree.

Research assistantship (RA): students may obtain research assistantships directly from individual Faculty Principal Investigators, usually their Major Advisor.

Students are strongly encouraged to pursue such research opportunities as early as possible during their degree.

Levels of compensation for TA's and RA's: these pay levels take effect in the semester immediately following the student's achieved new academic level: Tier I: Beginning student with BS; Tier II: MS or equivalent; Tier III: Passed general (prelim) exams.

Stipend Levels

Level 1	For graduate assistants with at least a bachelor's degree.
Level 2	For experienced graduate assistants in a doctoral program with at least a master's degree or its equivalent in the field of graduate study. Equivalency consists of 30 credits of appropriate coursework beyond the bachelor's degree completed at the University of Connecticut, together with admission to a doctoral program.
Level 3	For students with experience as graduate assistants who have at least a master's degree or its equivalent **AND** who have passed the doctoral general examination.

TA Responsibilities and Expectations:

It is an exciting opportunity to be able to impart to other students some of the knowledge in physics you've acquired throughout the years! Not only is teaching a critical mission of our department, this is a unique step in your professional development that may play an important role in your future career steps.

As a teaching assistant in the Department of Physics at the University of Connecticut, you are expected to carry yourself with professionalism in how you prepare for the courses you teach and in your interactions with students, faculty, and staff alike.

We do understand that balancing your multiple roles as a student, researcher, and TA can be difficult, and we are here to help you navigate issues like these. If you have any questions about the responsibilities listed here, or ever feel that you are being asked to do more than what is required of you as a teaching assistant, do not hesitate to speak with Diego Valente or a different member of the Teaching Labs team about your concerns.

As a Graduate Teaching Assistant, your responsibilities may include, but not be limited to, the list below. The exact scope of what you may be asked to do will depend on your assigned course and instructor, so don't hesitate to ask questions if you are unsure about your responsibilities!

- Preparing and presenting introductory lab material and/or tutorial activities
- Preparing and conducting laboratory activities and/or demonstrations in lab or classroom
- Attending lectures and supporting instructors by running group activities and fostering group discussions
- Attending weekly TA training sessions and TA orientation session at the beginning of the semester
- Checking equipment before and after a lab and helping maintain the lab room tidy for the next class
- Following and enforcing safe lab practices
- Creating and reviewing solution sets for homework and quizzes
- Writing and reviewing quiz questions
- Holding review sessions
- Maintaining office hours regularly as determined by course instructor or Teaching Labs staff
- Checking UConn email account daily for important communications with students, faculty, and staff
- Acting as a liaison between students and teaching lab staff/course instructors

- Proctoring exams
- Grading laboratory material, homework sets, tutorial problems, quizzes, and/or exams, as assigned
- Maintaining accurate, complete updated gradebook
- Assisting instructor in managing online grading system
- Coordinating final grade submission with instructors
- Preparing and posting laboratory syllabus on HuskyCT
- Using rubrics and online commenting in HuskyCT

Departmental and Graduate School Fellowships:

1. Pre-doctoral fellowships (criteria: merit, progress; usually for beginning students)
2. Graduate School Fellowships: Giolas-Harriott Fellowship, Crandall-Cordero Fellowship, Outstanding Scholars Program, Next Generation Connecticut Scholars Program.
3. Departmental Research Fellowship Awards. Merit-based awards from departmental endowments (Blonder, Frisius, Haller, Klemens, Nagavarapu, Pollack, Smith). Awarded to incoming students for summer research. Damon Award for more advanced experimental students.
4. Summer fellowships are generally available for beginning students preparing for written part of General Examination.
5. Summer school teaching assistantships are available.
6. Grad School Dissertation fellowship: completion of general exam (prelims) and approved dissertation proposal is required. Applications twice yearly: May and November.
7. Travel: After at least 30 credits, students are eligible to apply for a $1000 travel award from the Graduate School.
8. Advanced students may apply for the Teaching Mentoring program, to gain experience teaching a one semester course.

External Fellowships:

When Graduate Students receive outside fellowship awards, they need to contact the Graduate School *ASAP* to request funding for their tuition and inclusion on medical (coverage parallel to what they would have received as a GA).

Contact: Lisa Gorman lisa.gorman@uconn.edu

Register for 9 credits of GRAD 6950 to maintain full-time status.

Please see:

Policy on Competitive Federal Graduate Fellowship Awards
https://policy.uconn.edu/2011/05/31/policy-on-competitive-federal-graduate-awards/

Policy on Competitive Non-Federal Graduate Fellowship Awards
https://policy.uconn.edu/2012/09/05/policy-on-non-federal-fellowship-awards/

Additional Resources

TEACHING

Graduate Certificate in College Instruction https://gcci.uconn.edu/

The Graduate Certificate in College Instruction (GCCI) is a 9-credit program for individuals interested in deepening their theoretical and practical understanding of college teaching. This certificate program is intended to provide graduate students with a significant credential on their transcripts in the area of instructional understanding and competence. Applications are accepted twice a year: on November 15th for spring entrance and April 1 for fall entrance.

The Center for Excellence in Teaching and Learning https://cetl.uconn.edu/

The Center for Excellence in Teaching and Learning is dedicated to the support and advancement of best practices in teaching and learning at the University of Connecticut.

The Institute for Teaching and Learning has a Guidebook for Teaching Assistants
https://production.wordpress.uconn.edu/tapwp/wp-content/uploads/sites/603/2014/03/TA_GuidebookRev5_11.pdf