

Updated: May 22

# THE WILDCAT PHYSGRAD HANDBOOK

An Unofficial Guide to Starting Grad School at K-State

## CALENDAR/ SCHEDULE

This is a sample calendar of what to expect for your first year. K-State is on a standard 15-week schedule, with final exams taking place the Monday through Friday after the last week of classes. The schedules for the next few semesters are linked below. A standard week will see you going to class, working on homework, as well as teaching and/or participating in research. By the first summer, most students will have found a research group to work with.

2022-2023 Schedule: <https://www.k-state.edu/registrar/calendar/2022-2023%20Academic-Calendar-for-Web.pdf>

Academic Calendars can be found here: <https://www.k-state.edu/registrar/calendar/>

*What to Expect When You're Accepting*

### **i. After Committing**

- a) Once you've accepted your offer, you should begin planning your move here!
- b) Apartment searching can be daunting, but there are campus affiliated properties (Jardine Apartments) as well as plenty of off campus options. Feel free to reach out to current graduate students for help with the apartment hunt! There isn't really a "bad part of town" in Manhattan, although many grad students prefer to stay within walking distance to campus, since there is a fee for parking passes.
- c) K-State's Graduate School has a great page all about moving to Manhattan (including a Manhattan-specific apartment hunting guide), here's the link! <https://www.k-state.edu/grad/admissions/incoming-students/manhattan.html>
- d) Be sure to check both your physics email (after you have attended the Physics Department Computer Orientation) and your k-state.edu email regularly, so you don't miss important information. Checking your emails regularly is a really good habit to get into.

### **ii. Before Orientation**

- a) Get school (and life) supplies. :) There's a Target, Wal-Mart, and Staples. Manhattan has a local bus - the ATA bus system - that has regular routes that stop by all of

these stores, including Dillons (the local chain grocery store). See <https://www.fhata.org/routes>. If you need assistance with food here is a great resource: <https://www.k-state.edu/cats-cupboard/>. Kim Coy (contact info at the end of this document) also often has household supplies to help get you settled in if you need.

- b) Get a Student ID. Here is the link to the website: <https://union.k-state.edu/shopping-services/id-center> NOTE: You go to the K-State ID center that is located on the student union's ground floor to pick up your ID. There, you will show your proof of enrollment or acceptance letter from CollegeNet, get your picture taken, and receive your new ID on the spot.
- c) Get a parking permit if you are commuting and need one. Order a parking permit here: <https://ksu.t2hosted.com/Account/Portal> . And go to Parking Services in the parking garage at Anderson and N. M.L.K. Jr. Dr. to pick it up. Also ask for a "staff overlay sticker" so you can park in faculty/staff parking (Contact Kelsey in the Physics Department and she will let them know you are approved for one).
  - 1) If you're interested in biking around town, contact James Natoli for cycling info :)

### **iii. At Orientation (typically the week before classes start)**

- a) These will not be the most riveting hours of your life, but important to get brought up to speed.
- b) Here you will get lots of information about school services and how to deal with situations you might encounter as a graduate student.
- c) This is also an excellent opportunity to meet your new classmates and become best friends.
- d) The physics orientation happens on the last day of orientation. This day is department focused. You will learn about your responsibilities as a GTA, how to be a good GTA, get your photo taken for the web directory and photo board, get your desk in the GTA office, and more.
- e) Meet the current graduate students!
  - 1) We typically will hang out in some capacity the weekend before classes start to get to know each other.

### **iv. Before the First Day of Class**

- a) Find the rooms that your classes, labs, or studios will be in
  - 1) This is a link to a floor plan of the Physics Building if you like to be extra prepared [https://www.k-state.edu/facilities/projects/space/inventory/floor\\_plans/pdf/Cardwell%20Hall.pdf](https://www.k-state.edu/facilities/projects/space/inventory/floor_plans/pdf/Cardwell%20Hall.pdf)
- b) Look up the campus bus routes (here: <https://www.k-state.edu/parking/shuttle/> or look up the Manhattan ATA "fixed route pamphlet" for a map).
- c) Commuters please be aware that parking near Cardwell fills up FAST, usually by 9 AM. Plan accordingly for your morning obligations. There is a large lot a <10 minute walk from Cardwell (lot B16) that always has open spots. Here is a parking map: <https://www.k-state.edu/parking/CampusMap.pdf>

- d) GOOD LUCK if you want to walk in the North/South hallway on the first floor after the GP/EP courses let out. There is a secret staircase through the door in the basement beside the door to JRM that you can use to get to your class on the first floor without having to walk through millions of undergrads. B)

## Class Schedule

A sample schedule of how classes are generally laid out, showing the different common "tracks" students often take. Also a discussion about the stress/workload over the years.

		Fall 1*	Spring 1	Fall 2	Spring 2	Fall 3
<b>Track 1</b>	<b>Class 1</b>	Math Methods (801)	Quantum 1 (811)	Quantum 2 (911)	Elective :)	
	<b>Class 2</b>	E.D. 1 (831)	E.D. 2 (931)	Stat. Mech (971)	Advanced Dynamics (821)	
<b>Track 2</b>	<b>Class 1</b>	Math Methods (801)	Quantum 1 (811)	Quantum 2 (911)	Elective :)	Stat. Mech (971)
	<b>Class 2</b>	App. Quantum (709)	Advanced Dynamics (821)	E.D. 1 (831)	E.D. 2 (931)	Elective :)

- Your first Fall\* will also include Journal Club (806) and Seminar (807), both one hour once a week. Seminar may or may not continue as a registered class in future semesters
- The electives you take will vary based on your desired research area, your individual advisor's recommendations, and the availability of the courses. Here is a non-exhaustive list:
  - AMO: Physical Measurements and Instrumentation, Laser Physics, AMO Theory (I and II), Electron and Ion Impact Phenomena, Nonlinear Quantum Optics
  - PER: Teaching University Physics, Qualitative Research in Ed., Intro to Stats, Regression and Correlation Analysis (additional courses outside of physics are commonly recommended)
  - HEP: Particle Physics, Quantum Field Theory (I and II)
  - COS: Undegrad Cosmo, Cosmo I, Quantum Field Theory (I and II)
  - CMS: Bio Physics, Solid State Physics, Advances Topics in Solid State, Advanced Topics in Atomic Interactions
- Official course descriptions can be found in the catalogs at <https://catalog.k-state.edu/index.php?catoid=45> IMO.
- When you're on a GTA (graduate teaching assistantship), you are paid by the department, and they cover up to 10 credits. Extra room can be filled with research

credits (899/999) if you have a research advisor or other electives. PHYS 899 is used by those getting their Masters and PHYS 999 is used by those getting their Ph.D.

- For most of these classes, the books can be found online in pdf format, just ask the older students. If hard copies are more your style, you can always order them.
- Particularly time consuming classes that you'll need to budget a lot of your week towards
  - Math Methods
    - As the first grad class for many people this can involve some time consuming work. Dr. Greenman is one of the most approachable professors and always helps with problem sets.
  - Quantum 1 and 2
    - Homework for these could take 15 to 20 hours, you should absolutely collaborate on these assignments.
- It's a good idea to collaborate on all of your graduate coursework that your professor allows you to, which will be most of it!
- As far as choosing your path, most grad students will highly recommend starting with Math Methods and ED1. You might be encouraged to take AQM, and if that is the case you should definitely speak to a graduate student who has taken it before you make a decision. Except for extreme circumstances, every undergraduate degree should adequately prepare you to take Math Methods and ED.

## BEING A GTA

What's it like to be a graduate teaching assistant?

- I. Exam Grading (~5 times per semester + Final)
  - A. This will take 5-10 hours of your weekend, depending on the exam.  
Typically, exams are administered on Fridays, and the professor will ask for the grades to be inputted to Canvas by Monday morning. It's definitely best to start early! Exams are not allowed to leave the building, so be prepared to be on campus these weekends. You can usually find when the exams are going to be administered on the syllabus.
  - B. You might also be asked to proctor for an exam. This varies by instructor, but it usually involves going to a lecture hall and walking around for the exam period, making sure no one cheats, and facilitating student questions. You will then make sure everyone turns in their tests correctly and deliver the tests to store in the closet in CW 119. Your GTA office key unlocks this closet.
- II. In-Class Instruction (3 - 6 hours a week)
  - A. Labs
    1. These are in 2 hour blocks and will require about an hour of grading labs per section per week. Depending on the course, you could be a

lead instructor or paired with another instructor. You'll spend most of your time working with small lab groups to provide direction and help as needed.

#### B. Studios

1. These are also 2 hours, but have a primary and a secondary instructor. First year students are almost always secondaries. The primary gives a short lecture clarifying relevant topics, and then students work in groups to perform an experiment and solve a problem. The students will work on a conceptual problem and will also go over 1-3 labs. The secondary instructor's responsibility is the lab instruction while the primary's responsibility is the problem. Some primaries give you more freedom than others in this setup.

#### III. Help Room

- A. One hour of help room attendance is required per section you are in charge of. This is basically your office hours, so when there aren't many students, you're free to do other work. Exam weeks tend to be very crowded. A student from any intro class could ask for your help, so just do your best to try to help. You'll get to pick your times, so pay attention to your physics email because it's typically one grad student per time slot.

1. PRO TIP: Morning hours are typically the least busy.

In total, these duties should take no more than **20 hours a week**. Some weeks, they will likely take less and that is ok! That means you are an efficient worker. If you find these duties taking more than 20 hours, don't be afraid to reach out for help from your primary instructor, the lab coordinator (Brandi Lohman), or the lead instructor of your course. Older grad students can also help with specific tips and tricks for the courses, or to offer any advice.

## THE PHYSICS GRADUATE STUDENT COUNCIL

This is the primary organizational unit for the graduate students through which we interact with faculty and advocate for our interests. The PGSC uses collective action to bring graduate student concerns to the attention of physics faculty while promoting an inclusive and supportive community in the K-State Physics Department. I'd encourage everyone to get involved, either in an official position or by regularly attending both general and committee meetings. It's important to make your voice heard!

The exact structure changes slightly based on the immediate needs, but in general the elected positions look as follows:

- Ambassador to Faculty (main contact point to department head)
- Secretary/Treasurer (primarily in charge of logistics)
- Academic Affairs (classes, research, teaching, etc.)
- Internal Affairs (grad student health and non-academic support resources)

- Social Events (in charge of fun)

These last three positions will routinely hold committee meetings that are open to all and your space to bring up and discuss relevant topics/issues. Anything deserving faculty attention will be passed along to the Ambassador(s) for discussion. We use Slack as our primary mode of communication, so download that and join our workspace to stay up to date on all the happenings!

Here are a few accomplishments of the PGSC in the past year:

- Negotiated with faculty to secure a space for a graduate lounge
- Oversaw the purchase of microwave and refrigerator for GTA room
- Secured funding for social/professional events
- Increased graduate student attendance at group social events
- Organized academic resources to support course scheduling
- Refreshed graduate student representation on faculty committees
- Cooperated to write this very handbook!

## GRAD HANDBOOK

Summaries from both the physics department's grad school manual and the grad school's manual.

- I. Academic Eligibility
  - A. As grad students, we're required to maintain a 3.0 average in our classes. Basically, this means getting as many A's as you get C's (if any)
  - B. The University will put you on a probationary period if you are unable to maintain this for a semester.
- II. Departmental Exams (DE's)
  - A. Link to department page with study Q's
    1. <https://www.phys.ksu.edu/graduate/current/departmental-exams/index.html>
  - B. These are only offered the 3 days before the start of the Fall and Spring semesters (January and August)
  - C. The topics of the 5 comprehensive tests are Quantum Mech., Classical Mech., Statistical Mech. and Thermodynamics, Electrodynamics, and Modern Physics at the "senior undergraduate level"
  - D. They are 2 hours long, closed resource, and typically 4-5 questions
  - E. A list of about 30 study questions (from which the actual questions are almost always chosen) will be posted on the department website in a "timely manner"
    1. The questions change every iteration, but change more from Jan. to Aug. than Aug. to Jan.
    2. The new study questions are supposed to be uploaded at least a month but ideally several weeks before the tests are offered. If you

are wanting to study before the exams are uploaded, email the head of the DE committee (Dr. Schmit is the current head:

[schmit@phys.ksu.edu](mailto:schmit@phys.ksu.edu))

3. Questions are often recycled from old exams, and an informal bank of solutions dating back 10ish years exists to assist your studying.
- F. The exams are pass/fail and students have 2 opportunities to pass the exams. You are only required to retake the ones that you do not pass the first time. There have been special circumstances in which a third attempt has been necessary so if needed please consult your advisor or the department administration.
- G. The first attempt must be made before the start of your 4th semester at K-State.

### III. Program of Study

- A. After you have chosen a research group and a research advisor, you will need to fill out a program of study. You can find the electronic form to file one here: <https://www.k-state.edu/grad/about/forms/>
- B. On this form, you will list your courses you have taken and plan to take to satisfy your graduation requirements. You will also list your research advisor and committee members. These are members from the department and from other departments who will oversee your oral exams and dissertation.
- C. See your academic and/or research advisor for more information. The academic advisor has more information at <https://www.phys.ksu.edu/graduate/current/bureaucracy/program-of-study.html>.

### IV. Preliminary Oral Exam

- A. After the DE's have been passed, you've chosen a research group, and you have submitted your program of study, you are expected pass an oral exam.
- B. This is typically a 30 min to hour-long presentation on what you plan to research for your dissertation.
- C. Students should complete this by the end of their fifth semester in consultation with their research advisor.

### V. Dissertation and Final Oral Exam

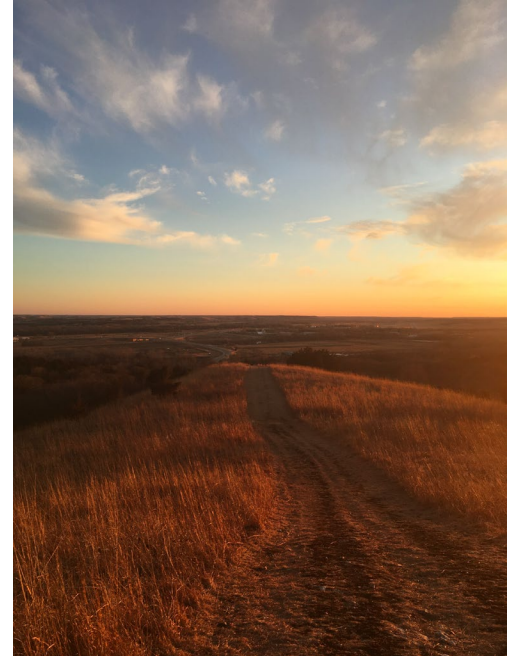
- A. Once you've completed all your wonderful research and discovered lots of splendid new physics, you will present your committee with your written thesis, and then present it in public a few weeks afterwards

## CAMPUS MAP/FUN STUFF IN MANHATTAN

### A. Parks and Outdoor Activities

(<https://mhkprd.com/160/Parks-Trails>)

- a. Konza Prairie (<https://kpbs.konza.k-state.edu/trails.html>)
  - i. Experience some of the last untouched prairie on the continent with 2, 4, and 6 mile trails. If you're careful you might see some bison!
- b. Linear Trail (<https://www.mhkprd.com/394/Linear-Trail>)
  - i. 13 miles of paved/gravel trail running around the south side of town
- c. Manhattan Farmers Market (<https://manhattanfarmersmarket.org/>)



Local businesses grow some spectacular fresh produce and meats. The farmer's market is held at 3rd and Leavenworth in the Dillard's west parking lot. Hours are from 8 a.m. until 1 p.m. every Saturday, from April through October and from 4 p.m. until 7 p.m., May through September, for the Wednesday evening market. During the winter months of November through March, the market begins at 9 a.m.

- d. City Park (<https://www.mhkprd.com/175/City-Park>)
  - i. One mile trail runs the perimeter, full of tennis, basketball, and volleyball courts, picnic tables, baseball diamonds, an ice rink in the winter, and the community pool. A free summer concert series happens on Friday nights
- e. Frank Anneberg Park (<https://www.mhkprd.com/178/Frank-Anneberg-Park-Twin-Oaks-Sports-Com>)
  - i. Large and new, tons of space for pickup sports with a 1.6 mile trail around the edge





- f. A & H Farms
  - i. This local homestead has an annual Fall Fest complete with hay rides, corn mazes, petting zoos, and all sort of miscellaneous activities
- g. Sunset Zoo
  - i. The local zoo just underwent an expansion and has a primate exhibit as well as an Asian animals exhibit. Located right in town, this is very easy to get to!

## B. Tailgating & Sports

- a. Football game days begin in the fall and are a lot of fun with food, friends, and drinks. Tickets are not usually that difficult to find for the games
- b. While K-State isn't spectacular at basketball, the games are still fun, and you can watch Kansas beat us once a year!
- c. The KC Royals and Chiefs play 2 hours away, as well as Sporting KC, the local MLS team
- d. Grad students have also been known to excursion to OKC for basketball games



## C. Restaurants & Bars

- a. LABCo
  - i. When we're feeling fancy, we often treat ourselves to a nice meal at this local restaurant, famous for yummy burgers and craft beers
- b. El Tapatio Mexican Restaurant

- i. While your options for Mexican food are slightly limited in Manhattan, the grad students like to get large groups together here



c. Gordo's Restaurante Mexicano

- i. Famous for their generous margaritas, grad students can often be found here on Mondays taking advantage of their weekly special

d. Auntie Mae's Parlor

- i. Our favorite watering hole, a speakeasy style bar where we find ourselves on most weekends

e. Taco Lucha

- i. An eclectic place famous for peanut butter tacos and Nancy's, grad students spend many a Thursday evening here taking advantage of the weekly deals



f. JP's Sports Bar & Grill

- i. With 2 locations on campus in the Union and at Jardine, grad students will often gather here to, you guessed it, take advantage of weekly deals



## EMERGENCY NECESSITIES

- Lafene Health Center
  - 1105 Sunset Avenue
  - This is the campus health center, good for almost all regular doctor things, checkups, blood tests, STI screenings, COVID tests
  - In general, if it's not an emergency, this is a good place to go
  - Each student has an online account accessed via the myLafene+ portal
    - <https://mylafene.ksu.edu/>
- Brew Bros Hops and Sprockets
  - 1110 Laramie St
  - Great local bike shop, they'll do any maintenance you need for a good price
  - They also sell homebrew materials
  - [http://www.hopsandsprockets.com/?gclid=CjwKCAjw8sCRBhA6EiwA6\\_IF4XiUcUk2pBxc\\_ZWqeHOiS3bokIwAjwGdPpPTaJM7gsC8gnXwDPiIrxoCCgoQAvD\\_BwE](http://www.hopsandsprockets.com/?gclid=CjwKCAjw8sCRBhA6EiwA6_IF4XiUcUk2pBxc_ZWqeHOiS3bokIwAjwGdPpPTaJM7gsC8gnXwDPiIrxoCCgoQAvD_BwE)
- Ekart Automotive
  - 411 S 5th St
  - In-town mechanic, quick oil changes, good for if your check engine light is on or if your car won't start
  - <https://ekartautomotive.net/>
- Post Office
  - There is a full service post office on campus in 113 Dykstra Hall.
  - All your regular postal needs can be satisfied here. The office hours are from 11 am – 3:30 pm Monday through Friday. If you don't have an outgoing mailbox you can mail letters from here as well, and there's a drop-off box outside.
  - 500 Leavenworth St
  - All your regular postal needs can be satisfied here. If you don't have an outgoing mailbox you can mail letters from here as well, there's a drop-off box here and at the main Manhattan Post Office on 6th Street between Leavenworth and Osage
- Riley County Clerk Office
  - 110 Courthouse Plaza
  - Election things can be done here (voting, dropping off mail-in ballot, etc.)
  - <https://www.rileycountyks.gov/16/County-Clerk-Elections>
- Optometrist
  - Manhattan Eye Care
  - 1430 Poyntz Ave, Manhattan, KS 66502

- Friendly doctors and is about a 20 minute walk from campus. Great place for an eye exam, and you can schedule one online <https://www.manhattaneyecare.com/>

## CONTACTS

Grad school is a cooperative venture, and no one is supposed to be going about it alone. There will absolutely be points when you need to reach out for help, so these are some examples of who you can contact, and in which situations.

- **Fellow Grad Students:** for small issues with classes, teaching, research, general Manhattan life, anything else not particularly pressing, your classmates and the older students are your best resource. We've all been where you are and can help point you in the right direction if we can't help you.
  - James Natoli: [james.v.natoli@gmail.com](mailto:james.v.natoli@gmail.com), +1 (443) 987 - 0816
  - Muhammad Sakhi: [sakhi@phys.ksu.edu](mailto:sakhi@phys.ksu.edu), +1 (785) 770 - 6416
  - Sanskruti Sharma: [sans1911@phys.ksu.edu](mailto:sans1911@phys.ksu.edu) +1 (785) 317-7463
  - Katelynn Hubenig: [khubenig@phy.ksu.edu](mailto:khubenig@phy.ksu.edu) +1 (785) 317-3721
- **Lab Coordinator:** If you have issues with any of the labs, Brandi Lohman typically has all the answers. Labs are somewhat separate from lecture, so your lead instructor may not always know specifically what is going on on the ground.
  - Brandi Lohman: [bcl6677@phys.ksu.edu](mailto:bcl6677@phys.ksu.edu)
- **Primary/Lead Instructor:** Questions more specific to the course you're teaching (grading, late policies) can be directed to the primary you're working with, or the lead instructor. Any issues with specific students can also be passed up to these instructors.
- **Course Professors:** In your grad classes, the professors are the experts and should always be willing to help. If you feel yourself struggling, it's always best to reach out sooner rather than later. Don't be afraid to stop by their office or ask for a time to meet, we've all spent many hours in different professors' offices.
- **Employment:** If you have questions that relate to your employment that you do not wish to discuss with the department HCS liaison or supervisor/head, you can contact the student ombudsperson. Kimathi Choma is the student Ombudsperson. Email him here: [kchoma@k-state.edu](mailto:kchoma@k-state.edu)  
Here's what K-State says about it:
 

At K-State an ombudsperson is an impartial faculty member or unclassified professional who serves as a resource to facilitate communication regarding concerns related to employment. The ombudsperson may also provide information about the grievance and appeal process and guide a grievant through the initial stages of a grievance.
- **Equity, Diversity and Inclusion Committee:** This committee is dedicated to making the physics department a safe, caring, and caring place for all students to succeed. This committee has graduate students who represent you and your concerns and work closely with faculty and staff. If you want to know what the

committee is up to, please contact any of the committee members. Find the EDI Committee webpage linked on the Physics department webpage:

<https://www.phys.ksu.edu/edi/>

The current graduate student representatives on the committee are:

- Pavan Muddukrishna: ([pmuddukrishna@phys.ksu.edu](mailto:pmuddukrishna@phys.ksu.edu))
- **Mick O'Shea:** Dr. O'Shea is the associate head of the department and graduate student advisor. He is a good person to go to with any concerns about the department.
  - Michael O'Shea: [mjoshea@phys.ksu.edu](mailto:mjoshea@phys.ksu.edu)
- **Kim Coy:** If you have no idea what you're doing or where to go, Kim's office is an excellent first step. Especially with logistical/procedural issues, Kim is extremely helpful. Usually well stocked with candy, she can always point you in the right direction
  - Kim Coy: [kim@phys.ksu.edu](mailto:kim@phys.ksu.edu)
- **Know your rights:** You have rights as a graduate student. This section of the student handbook tells you about them. This information can empower you and help you to advocate for yourself.
  - <https://www.k-state.edu/grad/student-success/graduate-handbook/appendixa.html>