HallGroupCheckin

Resources for (new) Students in the Hall Research Group. Everything in here is a loose sketch–your specific circumstances should always override these general cases. As always, ask if something in here doesn't seem to apply.

This guide is aimed at full-time students pursuing their PhD who do not already have a Master's degree. Active duty military here for the Master's program should look elsewhere. Eventually there will probably be a guide for you.

Check-in

Do these things as soon as you join the group.

Admissions stuff

- [ ] Send letter of acceptance to ?????
- [ ] Email John and Howard; Ask John to assign a sponsor
- [ ] Contact your sponsor for any questions over the summer about good places to live, etc.

University stuff

- [ ] Get an email address
- [ ] Get a university ID card
- [ ] Get a parking pass if you need one

Safety training

Available on Canvas
Print/Save as PDF each completion certificate

- [ ] EH&S training on Compressed Gas Cylinder A
- [ ] EH&S training on Hazard Communications
- [ ] EH&S training on HAZMAT
- [ ] EH&S training on Lab Safety
- [ ] EH&S training on Hydroflouric Acid
- [ ] EH&S training on Fume Hood

Radiation Safety

- [ ] Take the earliest possible open source training class

- [ ] Email Shawn Drake to be added to the online training for Open Source and Sealed Source (also on Canvas)
- [ ] Do the online training for radiation safety
- [ ] Email all certificates (7 online plus one from radiation safety class) to Matt Cook.

Good classes for new graduate students

The goal for your first year should be to get ready to take quals.

If you have a degree in nuclear engineering

- NE571 (Reactor Theory and Design)
- NE530 (Nuclear Security Sci & Analysis)
- NE551 (Health Physics/Radiation Protection)

If your degree is in some other field

- Fall Semester
  - NE470 (Reactor Theory): This will involve several projects with some calculus-2 based derivations and computer programming. Don't stress too much if you don't have a background in programming, there are resources in the group that can help.
  - NE551 (Radiation Protection): This is the class following NE433. You should feel pretty confident taking NE551, though. It's taught pretty well and it probably worth going straight into 551, rather than burning one of your 400-level classes.
- Spring Semester
  - NE550 (Radiation Detection): This class is a kick in the teeth, but you'll pretty much need it. It covers the different categories of radiation detectors along with a lab that uses most of them. This class will take up **A LOT** of time.

What you have to do to get your PhD

There are several steps to get your PhD. This is meant as a single-source site to aid in planning. Things could shift without me knowing; please check my math before you take anthing in here as gospel.

Take some classes

The requirements for coursework are:

- 48 credits of classes
  - 30 credits must be 500-level or above in the NE department
  - No more than 12 credits may be 400-level
  - At least 6 credits above 600 level
    - At least 3 credits towards this requirement must be in the NE department
- 24 hours of doctoral research
  - NE600: This is the (only) class that fills this requirement. Keep in mind that once you start taking this, you have to take it every semester (including Summer). If you need to be excused from this requirement there is a process for that, but you need departmental approval

Pass the Quals

Quals are offered in late May. The department website suggests taking the quals after 30 hours of coursework; I don't know why they do this. You should plan to take them after your first year in grad school, unless you have some reason not to.

Quals are taken over two days. The first day is two 90-minute tests, one on topics covered in Reactor Theory (NE470), the other on topics covered in Health Physics/Radiation Protection (NE433 and/or NE551). The second day is a 3-hour test in your field of research. Most of our group takes the **Security** qualifier. Useful classes for this:

- NE530: Overview of security topics,
- NE542: Fuel Cycles (for topics related to diversion, etc), and
- NE550: Yeah, the really hard class I talked about above.

Assemble your committee

Write and defend your proposal

Write and defend your thesis

- Formatting Rules
- Templates
- Approval Form

Other

Certificates

There are a couple of graduate certificates that you should be able to pick up pretty easily in this group.

There is a form available on Forms Central once you have completed the required courses. Fill it out and bring it to Dr. Hines to route.

Nuclear Security Science and Analysis Certificate: This requires four courses:

- NE530: Nuclear Security Science and Analysis
- Any one of the following:
  - NE404: Nuclear Fuel Cycle
  - NE433: Principles of Health Physics
  - NE470: Nuclear Reactor Theory I
  - NE542: Management of Radioactive Materials
  - NE551: Radiation Protection
  - NE571: Reactor Theory and Design
- Any two of the following
  - NE532: Advanced Topics in Nuclear Security Science and Analysis
  - NE533: Physical Security for High-Consequence Facilities
  - NE534: Physical Security Vulnerability Assessment
  - NE550: Radiation Measurements Laboratory
  - NE635: Nuclear Forensics
  - POLS686: Arms Control, Deterrence and Nucelar Nonproliferation

Useful Links

- Forms Central: Forms to request keys

Forms Central