

Physics

Professional behavior: Students are expected to behave properly, ethically, and professionally, No cheating. No harassment. Be kind to your fellow students, they may be on your review committees someday.

August: placement exam for 501, 503, 507, or challenge exam with permission of GPD

Year 1 fall term (standard sequence, maybe 1/2 of students follow standard sequence)

501 QM 1: grade of B or better - OR - pass challenge exam

503 E&M 1: grade of B or better - OR - pass challenge exam

507 Classical Mechanics: grade of B or better - OR - pass challenge exam

633 Seminar in Physics

January: placement exam for 611, and challenge exam for 502, 504 if allowed by GPD

Year 1 spring term

502 QM 2: grade of B or better - OR - pass challenge exam

504 E&M 2: grade of B or better - OR - pass challenge exam

611 Statistical Mechanics: grade of B or better - OR - pass challenge exam

634 Seminar in Physics

Note on challenge exams: *Taking the challenge exam generally requires that you have previously taken the course at Rutgers, but had a grade lower than B, or that you took an equivalent course elsewhere.*

Credit Transfer: After you have 12 Rutgers credits, if you took graduate courses before coming to Rutgers, you can transfer up to 24 credits of those grad courses which are not equivalent to courses taken at Rutgers. If the courses are equivalent to the core courses, you still need to pass the challenge exam or take the Rutgers core course.

Year 2 fall term

- Identify research mentor - Most Ph.D. students continue with their qualifier mentor for their Ph.D. project, but this requires their mutual agreement. Ph.D. projects and advisers can be in different areas from the qualifier. The graduate program includes many faculty with appointments not based in Physics and Astronomy, but the qualifier must be done with a mentor based in Physics & Astronomy.
- Notify GPD and qualifier comm. chair of project by Sep 1.
- Submit written report to your qualifier committee at least 1 week before presentation.
- Three parts of qualifier passed independently: written report, presentation, questions

Advanced to candidacy: requires completing 1st year core curriculum + qualifier.

Advanced coursework:

2 in-area courses

2 out-of-area courses - see note below

Annual committee meetings: start year after passing qualifier: Year 3, 4, 5, ...
Students advanced to candidacy who do not have annual committee meeting are considered to not be “in good standing” in the program / making appropriate progress towards their degrees.

72 credit requirement: You must take 72 credits. 10 courses = 30 credits listed above are required. Most students get most credits from Research in Physics, 701 / 702, after being advanced. (Before being advanced, sign up for 3-credit 623 / 624.) There is no reward for extra credits. Generally sign up for 1 - 9 credits of 701 / 702 as needed. Adjust the number to have 72 at the end of the term you defend. You must sign up for at least 1 credit per term. At least 24 of the 72 credits must come from 701 / 702.

PhD defense: For information on graduating, see the GSO site: <http://www.physics.rutgers.edu/GSO/thesis/thesis.shtml>
For forms and deadlines, also look at <http://gsnb.rutgers.edu/academics/how-apply-degrees>. Department policy requires a 5 person committee, usually made up of four members from your annual committee meetings plus 1 outside member.

Out of area course guide: The department research program is divided into 5 areas, and you must take 2 advanced grad courses in two different areas that are not your own. The courses listed below will satisfy the requirement. If you wish to use a course not on the list, *discuss this with the GPD first*. In particular, 509 is not an out of area course.

Area:	Standard Course(s)
A: Condensed Matter	601 solid state or 627 surface
B: Subatomic	605 nuclear or 613 particle
C: Astronomy	514 radiative processes, 607 galaxies, 608 cosmology
D: General Relativity	617 GR - out of area for everyone
E: Biophysics	567 Physics of Living Matter

Note: Graduate school forms can be found at:
<http://gsnb.rutgers.edu/resources/graduate-students-forms>.

Note on registration difficulties: 623 and 624 can be taken multiple times for credit, unlike the standard courses, other than the advanced special topics courses. Sometimes if you are having registration difficulties with a particular course, signing up for 623 / 624 instead and taking the course might provide a workaround. Please consult with the course instructor and GPD in this case.

Astronomy

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Year 1 fall term (standard sequence, maybe 1/2 of students follow standard sequence)

501 QM 1: grade of B or better - OR - pass challenge exam

503 E&M 1: grade of B or better - OR - pass challenge exam

507 Classical Mechanics: grade of B or better - OR - pass challenge exam

633 Seminar in Physics

January: The January placement exam are not required for astronomy students. Challenge exams might be offered, if needed.

Year 1 spring term

514 Radiative Processes: grade of B or better

607 Galaxies or 608 Cosmology grade of B or better

634 Seminar in Physics

Note on challenge exams: *Taking the challenge exam generally requires that you have previously taken the course at Rutgers, but had a grade lower than B, or that you took an equivalent course elsewhere.*

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Year 2 fall term

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- Notify GPD and qualifier comm. chair of project by Sep 1.
- Submit written report to your qualifier committee at least 1 week before presentation.
- Three parts of qualifier passed independently: written report, presentation, questions

Advanced to candidacy: requires completing 1st year core curriculum + qualifier.

Advanced coursework:

3 more advanced in-area courses are required:

Fall term: 606 Stars & Planets and 610 Interstellar Matter

Spring term: 607 Galaxies or 608 Cosmology (one was taken pre-advancement)
 2 out-of-area courses are required - see note below

Annual committee meetings: start year after passing qualifier: Year 3, 4, 5, ...
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