

# Graduate Studies in Physics

Application Requirements and Procedures



## Application for Admission to Graduate Standing

1. Complete the on-line UNR Graduate School application for admission. Information and links to application forms can be found at:  
<http://www.unr.edu/grad/admissions/>  
Note that there are two types of application form: one for U.S. citizens and resident aliens, and another for international applicants. The Graduate Record Exam (GRE) is required for admission to the graduate physics program (it is recommended to take the physics subject exam). Order a report to be sent directly to the UNR Graduate School (institutional code 4844).
2. Pay the application fee electronically (\$60 for U.S. citizens and resident aliens; \$95 for international applicants). Your application cannot be considered until the fee is paid. Fee waivers are not offered.
3. Order transcripts from every college or university attended. The issuing institution must send the transcripts directly to the UNR Graduate School. A grade point average (GPA) of at least 3.0 on a scale of 4.0 in all physics and mathematics courses, and an overall GPA of at least 3.0 in all undergraduate courses are required for admission to graduate standing in the Physics Department.
4. International applicants: Order a report of your Test of English as a Foreign Language (TOEFL) score. The Educational Testing Service must send your score directly to the UNR Graduate School (institutional code 4844). A TOEFL score of at least 500 (paper version) or 61 (internet-based version) is required for admission.

## Graduate Assistantships

### Who is eligible?

Any Graduate Student admitted to a graduate program, enrolled in at least six graduate level credits, and who holds at least a 3.0 GPA is eligible and will be considered for an assistantship. Typically, admitted student are offered financial support as teaching assistants.

### Who is not eligible?

- Graduate Specials
- Students on probation or suspension
- Students who fail to enroll in at least six credits each semester

### What are Graduate Assistant duties?

Duties vary. Teaching assistants typically teach undergraduate laboratory sections or grade assignments and exams. Research assistants work in specific research programs.

### What are the hours?

A full-time graduate assistantship is based on a 20-hour work week (50% full-time employment or FTE). Student and employer agree upon the specific hours.

### How much does a Graduate Assistant earn?

The minimum full time graduate assistantship is \$17,000 per academic year (ten months @ \$1,700 per month). Most graduate research assistants are paid on a twelve month basis. The maximum full time graduate assistantship is \$2,504 per month. The amount depends on the student's experience and responsibilities.

## What benefits accompany a graduate assistantship?

- All graduate assistants are entitled to a grant-in-aid, which pays the majority of per-credit fees. The grant-in-aid is a fee waiver that pays \$187.04 of each \$264.00 credit. The student pays \$60.96 per credit.
- Any graduate student holding an assistantship is considered a Nevada resident for tuition purposes. Non-resident tuition is waived as long as the student holds the assistantship (worth from \$1,584.00 (6 credits) to \$6,955.00 (7 or more credits) per fall or spring semester.)
- All graduate assistants are entitled to health insurance coverage (valued at \$2,549.44 (est.) per year) and are covered by Workers' Compensation. The student may also choose health insurance coverage for immediate family members at extra cost to the student.

University Health Insurance website:  
<http://www.unr.edu/shc/students/Insurance.html>

In addition to these financial benefits, assistantships allow students to work closely with faculty members, enabling them to develop a network of colleagues.

If you have any further questions, please do not hesitate to contact:

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Reno, NV 89557-0326

The application deadline is March 1 for the fall semester and decisions on admissions and assistantships will be made by April 1 for those whose applications have been completed prior to March 1. Students are required to accept the position by April 15.

For applications received by November 1, decisions will be made by December 1 for the Spring semester. Applicants will be notified shortly thereafter.

Applications that are completed after the deadline will be considered as positions become available in the department.

Once I have an assistantship, what do I have to do to keep it?

- First semester teaching assistants must register for GRAD 701: Preparing Future Faculty: College Teaching I. This course provides preparation and practice for teaching across disciplines at the college level.

Note: this is a full-term course and is a requirement to be satisfactorily completed, in order to maintain qualifications. For availability of the GRAD 701 course, check the course catalog or: <http://my.nevada.unr.edu>

- Good academic standing in the chosen graduate program must be maintained. The minimum requirement is a grade point average of 3.0 or better.
- Job duties must be performed satisfactorily.
- International students must pass TOEFL requirement as detailed on: <http://www.unr.edu/grad/funding/graduate-assistantships>

## Program at a Glance

Physics Graduate Program Director	Jonathan Weinstein E-mail: <a href="mailto:physreg@unr.edu">physreg@unr.edu</a> Phone: (775) 784-6821 Mailing Address: Department of Physics MS 0220 University of Nevada, Reno 1664 N. Virginia St. Reno, NV 89557-0220
Campus Location:	Leifson Physics Building (074), Room 225 Phone: (775)-784-6792 Fax: (775)-784-1398
Graduate Degrees Offered:	Master of Science (M.S.) Doctor of Philosophy (Ph.D)
Application Deadline(s):	Fall Admission: March 1 Spring Admission: November 1
Required Tests:	General GRE is required and the Physics GRE is strongly recommended.
Related Programs:	Atmospheric Sciences Mark Green E-mail: <a href="mailto:Mark.Green@dri.edu">Mark.Green@dri.edu</a> Phone: (775) 674-7118 Chemical Physics David Leitner E-mail: <a href="mailto:director@chemphys.unr.edu">director@chemphys.unr.edu</a> Phone: (775) 784-1968

## Advanced Degrees

Master of Science (M.S.), Doctor of Philosophy (Ph.D.)

The Physics Department offers graduate programs leading to the Master of Science (M.S.) in Physics and the Doctor of Philosophy (Ph.D.) in Physics. In addition to the general requirements of the Graduate School, the requirements for admission to graduate standing in physics are:

- A bachelor's degree from an institution offering an approved major in Physics (as defined by the American Institute of Physics).
- Completion of regular junior-senior courses in mechanics, optics, electricity and magnetism, thermal physics and modern physics.
- An average grade of 3.0 or better in all physics and mathematics courses, and an overall average of 3.0 or better in all undergraduate courses.

Applicants whose records indicate a deficiency in any of the requirements listed above may be admitted on a probationary basis and be required to take certain undergraduate courses (which do not carry graduate credit). All students working toward an advanced degree in physics must also satisfy the general requirements of the Graduate School.

### Master of Science Degree

The Physics Department recommends that students follow the Plan A (with thesis) option. The Program of Study must include:

PHYS 701 - Mathematical Physics	3
PHYS 702 - Classical Mechanics	3
PHYS 711 - Electromagnetic Theory I	3
PHYS 721 + 722 - Quantum Theory I and II	6
PHYS 790 - Seminar	1
Approved Electives	8
PHYS 797 - Thesis	6

<b>Total Credits:</b>	<b>30</b>
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The program of study is planned in consultation with a graduate advisor and is subject to approval by the student's advisory/examining committee and the graduate dean. The thesis should demonstrate the student's ability to carry out independent research. All Master of Science candidates must pass a final oral examination administered by the student's advisory/examining committee. The emphasis in the examination will be on the thesis.

### PROGRAM OF STUDY REQUIREMENTS Master's Program

#### Plan A (thesis)

- Minimum of 30 graduate credits
- Minimum of 21 of these credits earned at UNR
- Minimum of 18 credits (including thesis credits) taken at the 700 - level
- Six thesis credits
- Maximum of 9 credits can be completed prior to admission (including transfer credits)
- All requirements (credits) for degree (including transfer credits) must be completed within the period of six years immediately preceding completion of the Master's Program

#### Plan B (non-thesis)

- Minimum of 32 graduate credits
- Minimum of 23 of these credits earned at UNR
- Minimum of 15 credits taken at the 700 - level
- Maximum of 3 credits may be taken with S/U grading (including transfer credits)
- Maximum of 9 credits can be completed prior to admission (including transfer credits)
- All requirements (credits) for degree (including transfer credits) must be completed within the period of six years immediately preceding completion of the Master's Program.

## Doctor of Philosophy Degree

For students pursuing a doctorate, the purpose of the formal course work is twofold: to give the student a broad background in fundamental physics, and to prepare students for the research work that will form the subject of the dissertation.

Students are ordinarily expected to have earned the M.S. degree before entering the Ph.D. program. Before being accepted as a candidate, the student must have completed at least 75 percent of the required course work, and have passed the Physics Department comprehensive examination on graduate level material in Physics. The following courses, or their equivalents, must be satisfactorily completed for the doctoral degree in Physics.

PHYS 701 - Mathematical Physics	3
PHYS 702 - Classical Mechanics	3
PHYS 711 + 712 - Electromag Theory I and II	6
PHYS 721 + 722 - Quantum Theory I and II	6
PHYS 732 - Statistical Mechanics	3
PHYS 790 - Seminar	3
PHYS 795 - Comprehensive Exam	1
Approved Electives	9
Credits selected from other 700-level physics and/or Mathematics courses (maximum of six credits in PHYS 792)	14
PHYS 799 - (Dissertation)	24
<b>Total Credits:</b>	<b>72</b>

- At least 30 credits of 700-level graduate credits exclusive of dissertation credits transferred: as many as 18 of these credits may be from a Master's degree program.
- Fulfill residency requirement: two consecutive semesters (Fall or Spring) of at least nine graduate credits each (students on a 20 hour per week assistantship require 6 credits each semester).
- All requirements for the doctoral program, excluding prerequisite graduate course work or Master's Degrees, must be completed within a period of eight years immediately preceding completion of the Ph.D. program.
- Meet with your advisor on a regular basis

### PROGRAM OF STUDY REQUIREMENTS

#### Ph.D. Program

- Minimum of 72 graduate credits
- Minimum of 48 graduate credits of course work
- Maximum of 24 graduate credits from a Master's degree program or previous post-baccalaureate work may be applied to program, excluding thesis credits.
- Maximum of 9 credits of S/U grading (including transfer credits)

## Tuition & Value of Graduate Assistantship Fall 2016

Tuition per credit: \$ 264.00

Out of state tuition per semester (7 or more credits): \$ 6,955.00

Annual value of a Full-Time Graduate Assistantship (20 hours per week):	Domestic	International
Minimum stipend (Aug 1, 2016 - May 31, 2017):	\$ 17,000.00	\$ 17,000.00
Waiver of out of state tuition (Fall and Spring semesters):	\$ 13,910.00	\$ 13,910.00
Tuition waiver (7 credits Fall semester* @ \$ 264.00/credit): (This includes the required 1 credit GRAD 701 course)	\$ 1,848.00	\$ 1,848.00
Tuition waiver (6 credits Fall semester @ \$ 264.00/credit):	\$ 1,584.00	\$ 1,584.00
Health insurance coverage (full year):	\$ 2,760.00	\$ 1,306.67
<b>Total Annual Value of Assistantship:</b>	<b>\$ 37,102.00</b>	<b>\$ 35,648.67</b>

### Required Fees (What you need to pay for your first semester):

Tuition (6 credits each semester @ \$60.96/credit)	\$ 365.76
Technology Fee (also 6 credits @ \$7.00/credit)	\$ 42.00
Health Center (\$93.00/semester):	\$ 93.00
Counseling Services (\$50.00/semester):	\$ 50.00
Graduate Student Union Fee (\$97.00/semester):	\$ 97.00
New Graduate Student Orientation Fee (One time Fee):	\$ 35.00
Academic Success Fee:	\$ 5.00
Performing Art Fee:	\$ 5.00
<b>Total required fees (Initial Semester):</b>	<b>\$ 677.76</b>
International Student Registration Fee	\$ 145.00
<b>Total required fees (International Students) (Initial Semester):</b>	<b>\$ 822.76</b>