

# Master of Science - Health Physics

## Plan Description

The Master of Science (M.S.) – Health Physics is designed to prepare students in the field of health physics to administer public and private radiation health programs; investigate medical uses of radioactivity; measure and control radiation in the workplace and the environment; ensure compliance with radiation protection regulations; assist in the cleanup of radioactive and hazardous waste sites; evaluate worker, patient, and public radiation doses; and conduct research in radiation protection.

For more information about your program including your graduate program handbook and learning outcomes please visit the Degree Directory.

## Plan Admission Requirements

Application deadlines Applications available on the UNLV Graduate College website. Complete the Graduate College online application for admission. Completed applications, official Graduate Record Examination (GRE) scores, one copy of official transcripts from all post-secondary institutions, and all other documents (i. e., recommendation provider information and statement of professional goals) should be uploaded into the online application system. Students seeking admission to the graduate program in health physics must fulfill the following admission requirements: Overall GPA of 3.00 (A=4.00 or equivalent) in undergraduate work. Applicants with a GPA below 3.00, but not less than 2.75, may be admitted as a graduate provisional student. Successful completion (grade of C or better) of the following course work: Seven-semester credits in biology including an introductory modern biology course and one higher level course Ten-semester credits in chemistry or geology including a general chemistry sequence and one higher-level course Eight-semester credits in elementary calculus (mathematics through differential equations is recommended) Twelve semester credits in physics including a general physics sequence A course in computer programming (an additional course in numerical methods or scientific computing is recommended) Applicants not meeting a limited number (maximum of nine credit hours) of prerequisite requirements may still be admitted to the program. However, prerequisite ~~requirements may still be admitted to the program. However,~~ **prerequisite** deficiencies must be completed during the first year of study and prior to registering for Thesis or Professional Paper. Completion of a **regionally accredited** baccalaureate degree in health physics, one of the basic sciences, or in a closely related scientific or engineering field. Applicants holding a degree in a non-related field may be given special consideration if they have completed all prerequisite course work. Students seeking ~~entry entry entry~~ **entry** to the medical ~~physics physics~~ **physics** specialization must have a strong foundation ~~in i n~~ **in** physics and, as such, applicants are required to have either an undergraduate degree in physics or a degree in a related engineering or physical science discipline with course work equivalent to a minor in physics (includes at least three upper level undergraduate physics courses). A score ranking in the 50th percentile or higher on the verbal and quantitative sections of the Graduate Record Exam (GRE) **is preferred**. Tests taken prior to August 2011 require, **preferably**, a composite score of 1,000 or higher on the verbal and quantitative sections of the Graduate Record Exam (GRE). Three letters of recommendation from former instructors or employers that speak to the applicant's potential as a graduate student. Contact information for recommendation providers should be entered into the recommendation page of the online application.

Recommenders will then upload their letters directly into the student's online ~~application applica-tion~~ **application**. A ~~statement-statement-ent statement~~ **statement** of approximately 300 words ~~indi-cating~~ **indicating** the student's ~~professional prof essional~~ **professional** goals and reason for seeking graduate education. All domestic and international applicants must review and follow the Graduate College Admission and Registration Requirements. Students are accepted into a degree program as described in the Graduate Catalog. The faculty and corresponding sub-disciplines and sub-plans within the described programs are subject to change at any time.

## Plan Requirements

See Subplan Requirements below.

Subplan 1: Environmental Health Physics

Subplan 2: Medical Physics

## Subplan 1 Requirements: Environmental Health Physics

Total Required Credits: 40

## Course Requirements

### Required Courses – Credits: 18

**Complete 18 credits by completing all courses below:**

HPS 602 Radiation Detection	3
HPS 603 Radiation Physics and Instrumentation Laboratory	3
HPS 701 Applied Nuclear Physics	3
HPS 703 Radiation Interactions and Transport	3
HPS 720 Radiation Dosimetry	3
HPS 730 Advanced Radiation Biology	3

### Seminar Course – Credits: 3

**Complete 3 credits of the following course:**

HPS 611 Health Physics Seminar	1
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**Core Courses – Credits: ~~10~~ 6****Complete 6 credits by completing all courses below:**

HPS 616 Advanced Health Physics	3
HPS 670 Environmental Health Physics	3
<del>HPS 718 Radiochemistry Laboratory</del>	<del>3</del>
<del>HPS 719 Introduction to Radioanalytical Chemistry</del>	<del>1</del>

**Elective Courses – Credits: ~~3~~ 7**

Complete ~~3~~ 7 credits from the following list of courses, any graduate-level health physics (HPS) courses, or other advisor-approved graduate-level courses.

HPS 750 Radiation Risk Assessment	3
HPS 760 Environmental Restoration and Radioactive Waste Management	3

**Culminating Experience – Credits: 6**

Complete **6 credits of** one of the following **courses**:

HPS 797 Thesis	1-3
HPS 796 Professional Paper	3

**Plan Degree Requirements**

Maintain a cumulative grade point average of 3.00 or above each semester enrolled. Receive a grade of B (3.00) or above in all core health physics courses. If less than a B is earned, the course may be repeated. The student must be in good standing to repeat a course, and any core course may be repeated only once. Select a thesis advisor from the full graduate faculty in the program by the end of the student's first semester in the program. Failure to select a thesis advisor may result in probation or eventual termination from the program. In consultation with **his/her/Their** **their** advisor, a student will organize an advisory committee of at least three departmental members. In addition, a fourth member from outside the department, known as the Graduate College Representative, must be appointed. An additional committee member may be added at the student and department's discretion. Please see Graduate College policy for committee appointment guidelines. Pass the comprehensive oral examination. The **comprehensive comprehensive** oral exam will be taken by all students after completion of the second semester of enrollment in the program. The exam will be pass/fail. Students who fail the

exam may re-take the exam prior to the start of their third semester of enrollment. Students who fail their second attempt will be separated from the program. Students may not defend their thesis prospectus or proceed with their professional paper until successful completion of the oral exam. The exam will be administered by the graduate faculty from Health Physics. Continuously register for three credit hours of thesis or professional paper each semester while working on the thesis or professional paper until completion. Credit by Challenge Examination: Graduate courses in the Health Physics program may not be challenged for credit. Allotment of Credits: Students have a choice of catalog under which they wish to graduateThe year of official matriculation, orThe year of graduationStudents are encouraged to meet the ~~requirements~~ **requirements** of the current catalog. A final oral examination will be held following completion of the thesis or professional paper resulting from a research project. The final examination must be held by the Graduate College deadline in the term in which the student plans to complete the degree requirements.

## Graduation Requirements

See Plan Graduation Requirements below.

## Subplan 2 Requirements: Medical Physics

Total Required Credits: 40

## Course Requirements

### Required Courses – Credits: 18

#### **Complete 18 credits by completing all courses below:**

HPS 602 Radiation Detection	3
HPS 603 Radiation Physics and Instrumentation Laboratory	3
HPS 701 Applied Nuclear Physics	3
HPS 703 Radiation Interactions and Transport	3
HPS 720 Radiation Dosimetry	3
HPS 730 Advanced Radiation Biology	3

## Seminar Course –Credits: 3

### Complete 3 credits of the following course:

HPS 611 Health Physics Seminar	1
HPS 792 Ethics for Medical Physicists	1

## Core Courses – Credits: 13

### Complete 13 credits by completing all courses below:

HPS 676 Sectional Anatomy	3
HPS 740 Medical Imaging Physics	3
HPS 742 Radiation Therapy Physics	3
HPS 742L Therapy Physics Clinical Rotation and Lab	3
HPS 795 Independent Study	1 – 3

## Culminating Experience –Credits: 6

### Complete 6 credits of one of the following courses:

HPS 796 Professional Paper	3
HPS 797 Thesis	1-3

## Plan Degree Requirements

Maintain a cumulative grade point average of 3.00 or above each semester enrolled. Receive a grade of B (3.00) or above in all core health physics courses. If less than a B is earned, the course may be repeated. The student must be in good standing to repeat a course, and any core course may be repeated only once. Select a thesis advisor from the full graduate faculty in the program by the end of the student's first semester in the program. Failure to select a thesis advisor may result in probation or eventual termination from the program. In consultation with **his/her their** advisor, a student will organize an advisory committee of at least three departmental members. In addition, a fourth member from outside the department, known as the Graduate College Representative, must be appointed. An additional committee member may be added at the student and department's discretion. Please see Graduate College policy for committee appointment guidelines. Pass the comprehensive oral examination. The **comprehensive comprehensive** oral exam will be taken by all students after completion of the second semester of enrollment in the program. The exam will be pass/fail. Students who fail the exam may re-take the exam prior to the start of their third semester of enrollment. Students who fail their second attempt will be separated from the program. Students may not defend their thesis prospectus or proceed with their professional paper until successful completion of the oral exam. The exam will be administered by the graduate faculty from Health Physics. Continuously register for three credit hours of thesis or professional paper each semester while working on the thesis or professional paper until completion. Credit by Challenge Examination: Graduate courses in the Health Physics program may not be challenged for credit. Allotment of Credits: Students

have a choice of catalog under which they wish to graduateThe year of official matriculation, orThe year of graduationStudents are encouraged to meet the **requirements requirements** of the current catalog. A final oral examination will be held following completion of the thesis or professional paper resulting from a research project. The final examination must be held by the Graduate College deadline in the term in which the student plans to complete the degree requirements.

## Graduation Requirements

See Plan Graduation Requirements below.

## Plan Graduation Requirements

The student must submit all required forms to the Graduate College and then apply for graduation up to two semesters prior to completing **his/her their** degree requirements. The student must submit and successfully defend **his/her their** thesis or professional paper by the posted deadline. The thesis defense must be advertised and is open to the public. After the thesis defense, the student must electronically submit a properly formatted pdf copy of their thesis to the Graduate College for format check. Once the thesis format has been approved by the Graduate College, the student will submit the approved electronic version to ProQuest. Deadlines for thesis defenses, format check submissions, and the final ProQuest submission can be found here.