Student Handbook

Medical Physics Programs

University of Pennsylvania

College of Liberal and Professional Studies
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I. Introduction

The purpose of this handbook is to provide students in the Medical Physics Programs (MPP) with information vital to the successful completion of the program. In this handbook you will find information on academic requirements, program and University policies and procedures, and program and University resources. This handbook is designed to provide general information and does not supplant official publications or University web pages. Should you have questions that are not answered here or problems that you cannot resolve, you should consult the MPP Program Director immediately.

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II. Program Overview

Master of Medical Physics (MMP)

The CAMPEP-accredited Master of Medical Physics (MMP) program at the University of Pennsylvania meets the academic and career interests of technically prepared college graduates who seek to combine their interests in graduate physics with growing career opportunities in the field of medicine.

The MMP degree provides students with rigorous education in essential graduate-level physics courses as well as more customary coursework in medical physics, anatomy, and radiation biology. The traditional problem-solving techniques emphasized in physics graduate education give students a unique perspective and enable them to address a wide variety of problems encountered in the modern medical environment. Such a fundamental education also allows them to evolve with the field of medical physics as it continues to embrace the most advanced technologies. The program offers an exceptionally well-balanced education, combining classroom, laboratory, and clinical training. The program also stresses communication, ethics, and responsibility (in both clinical and research settings), promoting the highest standards in patient care. The traditional problem-solving techniques emphasized in physics graduate training will enable students to address a wide variety of problems encountered in the modern medical environment and to evolve with the field as it continues to embrace the most advanced technologies.

15 course unit (CUs) are required to complete the degree. Full-time students will complete the program in two years. In the second year, students will spend a significant amount of their time completing appropriate clinical rotations, primarily in the University of Pennsylvania Health System (UPHS). Part-time study may be possible, and will be considered on an individual basis by the MPP Program Director.

After graduation, outstanding students may be selected to enter a Medical Physics Residency program in the UPHS. This program is one year in length, renewable for a second year. This clinical experience would count toward the requirements for certification by the American Board of Radiology.

Post-Graduate Certificate

The University of Pennsylvania’s CAMPEP-accredited Medical Physics Post-Graduate Certificate Program will offer participants a curriculum based on the recommendations of AAPM report #197S. Coursework will include radiological physics, radiation protection, medical imaging, medical ethics/government regulation, anatomy and physiology, radiobiology, and the physics of radiation therapy. Students will complete a total of 6 CUs (18 semester hours) over the course of two semesters.

Relationship Within the University
The Medical Physics Programs (Master of Medical Physics degree and Post-Graduate Certificate) are offered by the Department of Physics and Astronomy in the School of Arts and Sciences in conjunction with the Departments of Radiology and Radiation Oncology in the School of Medicine. It is housed under the auspices of the College of Liberal and Professional Studies (LPS).

III. Program Curriculum

Master of Medical Physics (MMP) Curriculum

Fifteen course units (the equivalent of 45 credit hours) at the graduate level are required for the MMP degree. With the exception of submatriculants admitted from the University of Pennsylvania, students may not apply any graduate-level courses taken as undergraduates against the 15 course unit requirement. In addition to the 15 required CUs, MMP students are required to satisfactorily participate in the non-credit MMP seminar series during each semester in the program and also in the non-credit two-semester Introductory Practicum courses in their first year. The 15 course units should be completed in four semesters, or a maximum of eight semesters for part-time students; exceptions may be granted by the Program Director.

First Year Curriculum

During the first year, students take the following 8 required courses for a total of 7 course units (CUs):

- **MMP 501: Introduction to Radiation Protection** (0.5 CU): Introduction to applied nuclear and atomic physics; radioactive decay; radiation interactions; biological effects and safety guidelines; radiation detection, instrumentation, and protection.

- **MMP 502: Medical Ethics and Governmental Regulation** (0.5 CU): Fundamentals of professional ethics for medical physicists through exploration of Code of Ethics (published by the American Association of Physicists in Medicine), case studies, and surveys of governmental regulations pertinent to medical physics are covered.

- **MMP 506: Physics of Radiation Therapy**: Clinical radiation oncology physics; principles of radiation producing equipment; photon and electron beams; ionization chambers and calibration protocols; brachytherapy, dose modeling and calculations; treatment planning.

- **MMP 511: Image-Based Anatomy**: Taught by a radiation oncologist, this course focuses on major organ systems and disease areas and is presented from a radiologic or imaging (including cross-sectional) viewpoint in addition to a standard anatomy and physiology presentation. This course is required by the ABR.
- **PHYS 561: Electromagnetism I**: Intermediate course covering electrostatic fields and potentials, dielectrics, and direct currents.

  — OR —

- **PHYS 500: Mathematical Methods**: Concepts and techniques of classical analysis employed in physics theories. Topics include complex analysis, Fourier series and transforms, ordinary and partial equations, and Hilbert spaces.

- **PHYS 521: Advanced Laboratory**: Directed experiments in classical, modern, and medical physics introducing the student to modern laboratory instrumentation and techniques.

- **PHYS 562: Electromagnetism II**: A continuation of PHYS 561 covering magnetic fields and potentials, electromagnetic induction, Maxwell’s equations, electromagnetic waves, and radiation.

  — OR —

- **PHYS 516: Electromagnetic Phenomena**: Electrostatics and magnetostatics, Maxwell’s equations, electromagnetic waves, and radiation.

- **PHYS 582: Medical Radiation Engineering**: Fundamental concepts underlying radiological physics and radiation dosimetry. Covers photon and neutron attenuation, radiation and charged particle equilibrium, interactions of photons and charged particles with matter and radiotherapy dosimetry, including photographic, calorimetric, chemical, and thermoluminescence dosimetry.

- **MMP 525 and MMP 526: Introductory Practicum**: First year students are required to complete these two non-credit courses. Students are introduced to the various specialties of medical physics including radiation oncology, diagnostic imaging, nuclear medicine and medical health physics.

*Second Year Curriculum*

During the second year, all students will take the following 5 required medical physics courses for a total of 8 course units (CUs):

- **MMP 507: Physics of Medical Imaging**: Physical principles of diagnostic radiology, fluoroscopy, computed tomography; principles of ultrasound and magnetic resonance imaging; radioisotope production, gamma cameras, SPECT systems, PET systems; diagnostic and nuclear medicine facilities and regulations.

- **MPP 512: Radiation Biology**: Fundamental knowledge of mechanisms and biological responses of human beings to ionizing and non-ionizing radiation through the study of effects of radiation on molecules, cells and humans; radiation lesions and repair; mechanisms of cell death; cell cycle effect, radiation sensitizers and protectors; tumor radiobiology; relative sensitivities of human tissue and radiation carcinogenesis. This course is required by the ABR.
MATH 584: Mathematics for Medical Imaging: Covers the basic principles of mathematical analysis, the Fourier transform, interpolation and approximation of functions, sampling theory, digital filtering and noise analysis.

MMP 599: Capstone Project (2 CUs)

Students beginning their second year will be required to select an area of clinical concentration. Based on this area of clinical concentration, along with the guidance of their academic advisor or Program Director, students will select/arrange the following:

MMP 531: Clinical Practicum (1 CU)

Two elective courses

Medical Physics Seminar Series: All students in the MMP program are required to attend this non-credit series. It is clinically oriented and surveys the various subspecialties of medical physics as well as more general physics topics.

Typical MMP Academic Program of Study (Radiation Oncology concentration)

First year, Fall semester
- MMP 501: Introduction to Radiation Protection (.5 CU)
- MMP 511: Image-Based Anatomy (1 CU)
- MMP 525: Introductory Practicum I (0 CU)
- PHYS 561: Electromagnetism I (1 CU)
- PHYS 582: Medical Radiation Engineering (1 CU)

First year, Spring semester
- MMP 502: Medical Ethics/Governmental Regulation (.5 CU)
- MMP 506: Physics of Radiation Therapy (1 CU)
- MMP 526: Introductory Practicum II (0 CU)
- PHYS 562: Electromagnetism II (1 CU)
- PHYS 521: Advanced Laboratory (1 CU)

First year, Summer semester
- MMP 531: Clinical Practicum (1 CU)

Second year, Fall semester
- MMP 507: Physics of Medical Imaging (1 CU)
- Elective (1 CU)
- MMP 599: (Capstone Course) (1 CU)

Second year, Spring semester
- MMP 512: Radiation Biology (1 CU)
- Elective (1 CU)
- MATH 584: Mathematics for Medical Imaging (1 CU)
- MMP 599: (Capstone Course) (1 CU)
Total: 15 course units (CUs)

Post-Graduate Certificate Curriculum

Typical Post-Graduate Certificate Academic Program of Study

Fall Semester

- MMP 501: Introduction to Radiation Protection (0.5 CU)
- MMP 511: Image Based Anatomy (1 CU)
- PHYS 582: Medical Radiation Engineering (1 CU)
- MMP 506: Physics of Radiation Therapy (1 CU)
- MMP 525: Introductory Practicum I (0 CU)

Spring Semester

- MMP 502: Medical Ethics and Governmental Regulation (0.5 CU)
- MMP 507: Physics of Medical Imaging (1 CU)
- MMP 512: Radiation Biology (1 CU)
- MMP 526: Introductory Practicum II (0 CU)

Total: 6 course units (CUs)

IV. Program Resources

Student Resources

The MPP program department is located in Suite 1N1 of the David Rittenhouse Laboratory (DRL) building at 209 S. 33rd Street (basement level, north side of building). Either a punch code or key is necessary to enter Suite 1N1, either of which may be obtained from the MPP Program Coordinator.

Lockers are available for MPP students to store personal items while they are on campus. Individual powered study carrels are available specifically for MPP students as well as small conference tables and whiteboards for group work or projects. There is also a room with a larger conference table and another area for less formal gatherings as well. A kitchenette is also available for MPP student use.

Two desktop computers, a large-screen monitor, and a printer are available for MPP program students to use as well as access to basic office supplies. Contact the MPP Program Coordinator for more information on these resources.

The IP address for our printer is 128.91.43.173. Instructions on how to connect to a printer are located at http://www.sas.upenn.edu/computing/physics/printers.

AAPM Membership
The website of the American Association of Physicists in Medicine (http://www.aapm.org) is a good resource for general information about the field of medical physics. All MPP students are required to join the AAPM. Membership benefits with the AAPM include access and subscriptions to journals, salary surveys, medical physics position listings, and membership directories. Student dues are $29 per calendar year (waived for first year) and a $25 application fee.

Applications may be printed from the AAPM website at http://www.aapm.org/memb/prospect/default.asp or obtained from the MPP Program Coordinator.

HPS Membership

The website of the Health Physics Society (http://www.hps.org) is a good resource for information regarding the radiation safety aspects of medical physics. All MPP students are strongly encouraged to join the HPS national and Delaware Valley chapters. Membership benefits with the HPS include access and subscriptions to journals and handbooks, invitations to local and national meetings, medical physics position listings and membership directories. Student membership in the national chapter is free for the first year and $10 for each subsequent year while still a student.

Applications may be printed from the HPS website or obtained from the MPP Program Coordinator. Alternately, you can apply online at https://hps.org/join/.

Membership in the Delaware Valley HPS chapter is $10 per year and an application can be found online at http://hpschapters.org/dvsrs/History.htm.

DRL Internet Access

You can connect to a wireless connection using your own personal laptop or computer within the David Rittenhouse Laboratory (DRL) building. In order to do this, you need to determine the MAC address of your Ethernet card, which should look similar to this: 00:55:AB:55:CD:00.

For Windows XP/Win 2000:
- Open up a Command Console (e.g., Start Menu → Run → type cmd → Enter)
- Type ipconfig /all
- Find your network interface/card
- The MAC address (aka physical address) is the number consisting of six alphanumeric pairs

For OS X:
- Launch System Preferences
- Launch Network
- Select the TCP/IP tab
- The Ethernet Address, consisting of six alphanumeric pairs, is the number you need to report
For Linux:

- In a console/term type `ifconfig` (usually need root privileges)
- Find your Ethernet interface (e.g., `eth0`)
- The `HWaddr` assigned to your Ethernet interface is the MAC address you need to report

Once you have established your MAC address, register it at [http://www.math.upenn.edu/cgi-bin/dhcpreg/dhcpreg.pl](http://www.math.upenn.edu/cgi-bin/dhcpreg/dhcpreg.pl). It may take up to 20 minutes for registration to take effect. Visit [http://www.sas.upenn.edu/computing/wireless](http://www.sas.upenn.edu/computing/wireless) for instructions on configuring wireless connectivity. Additional information regarding computing support in DRL can be found at [http://www.sas.upenn.edu/computing/physics](http://www.sas.upenn.edu/computing/physics) or by emailing help@physics.upenn.edu.

**MatLab**

Computers with MatLab installed are available for your use at various SAS Computing lab locations throughout campus. One such location is Multi-Media Services (MMS) located in the David Rittenhouse Laboratory Building. You can enter from the left most set of double doors that face 33rd St. A large sign is posted above the set of doors that reads “Multi-Media Services.” Forty computers are available for walk-in use as long as they have not been reserved for a class. For further descriptions of MMS and to check computer availability, go to [http://www.sas.upenn.edu/computing/mms](http://www.sas.upenn.edu/computing/mms).

Other SAS Computing lab locations with MatLab software include the David B. Weigle Information Commons in Van Pelt-Dietrich Library (3420 Walnut St.) and the Undergraduate Data Analysis Lab (UDAL) in rooms 104, 108 and 109 of the McNeil Building (3718 Locust Walk).

**Physics Library**

The Physics and Astronomy Library is located on the third floor of the David Rittenhouse Laboratory (DRL) building at 209 S. 33rd Street where most of your physics courses will take place. You will find helpful and current information on physics topics relevant to your coursework. For more information, contact the library at 215.746.0228 or visit the science and engineering library website at [http://gethelp.library.upenn.edu/support/scitech/csf.html](http://gethelp.library.upenn.edu/support/scitech/csf.html).
V. Program Policies & Procedures

Academic Standards

Students in the MPP Program are expected to maintain the highest possible academic standards. To ensure that students are making satisfactory progress toward their degree, the advisors regularly review student performance. The MPP Faculty Advisory Committee has adopted the following requirements to assure that MPP students are making good progress toward their degrees:

- Students must take all required courses counting toward their MPP degree for a letter grade. Pass/Fail courses may not be counted toward the degree.
- Students must maintain a 3.0 grade point average in order to graduate from the program.
- Only one course with a grade below “B” may be counted to fulfill MPP program requirements.
- Students who receive a grade below a “B-” or have more than one “B-” will be reviewed by the Faculty Advisory Committee and may be placed on academic warning or expelled from the program.
- With the permission of the Faculty Advisory Committee, students may take additional courses in order to increase their GPA or to replace courses with grades below a “B.”
- Students whose GPA falls below a 3.0 for a semester will be placed on academic probation and given one semester to bring the GPA to 3.0 or above.
- Students can take only one incomplete at a time. If they have two or more incompletes on their transcript, their registration is automatically blocked until they complete those courses. Incompletes will automatically be turned to an “F” at the end of the following semester in which the incomplete was received.

Inactive Status

Students not enrolled in courses for four consecutive terms, including Summer Term, will be considered inactive. These students will be automatically withdrawn from the program and will be required to apply for readmission. Standard application fees will apply.

Leave of Absence

Students who discover that they are unable to continue with their course work after four semesters, but who wish to remain in the program, should consider a leave of absence. Those students should notify the MPP Program Director of their desire to take a leave and give their reason for the leave. If the student must extend the leave for more than one year, he or she should request an extension in writing from the MPP Program Director.

Submatriculation

Submatriculation is an academic option for University of Pennsylvania undergraduate students to take graduate-level courses toward the Master of Medical Physics (MMP) program, enabling completion of the undergraduate and graduate degrees within five and
a half years. Applicants must have the equivalent of a Physics minor to be considered for submatriculation. Students interested in submatriculation should contact both their undergraduate advisor and the Medical Physics Programs Director for academic advisement.

Undergraduate students are encouraged to apply in their junior year. The deadline to apply for submatriculation is November 1st of senior year. Seniors in their last semester are not eligible for submatriculation.

All students must apply via the online application for the Master of Medical Physics program: http://www.sas.upenn.edu/lps/graduate/mmp/application.

A submatriculation application to the MMP program must contain all of the following in order to be considered complete:

- Completed application form
- Three letters of recommendation
- Non-refundable application fee
- Application essays

Students may double count up to four course units (CUs) of graduate level courses toward their undergraduate and graduate (MMP) degrees with approval by both the undergraduate advisor and Medical Physics Programs Director. More than four CUs of graduate level courses for the MMP degree taken by submatriculants will not be accepted. Courses taken at the University prior to submatriculation must be approved by the MMP Program to count toward completion of MMP degree requirements.

Additional information on submatriculation can be found on the College of Arts & Sciences website at http://www.college.upenn.edu/submatriculation. Questions about submatriculation should be directed to the Medical Physics Programs Coordinator.

Provisional Status

Some students seeking admission to the MMP program may be returning to school after a long absence or have undergraduate records that do not accurately reflect their academic ability. Those students may be accepted into the MMP program provisionally.

After successfully completing two courses with grades of “B” or better and receiving favorable recommendations from two MMP program faculty members, students are formally admitted to the MMP Program.

Deferred Enrollment

Students who are admitted to the MPP program may defer their matriculation for one year. Students who wish to defer should notify the MPP Program in writing of their intentions as early as possible. It is not necessary for deferred students to reapply. However, students must inform the MPP Program if they enroll at any other institution prior to their matriculation at the University of Pennsylvania, and they must submit final
official transcripts of any coursework completed prior to their enrollment at the University of Pennsylvania.

Transfer Credit

Students who enter the MPP program from the University’s Post-Baccalaureate Undergraduate Studies program may count up to four graduate level courses toward their MPP degree. These courses must be submitted to the MPP Program for approval during the first semester of matriculation in the MPP program. Only courses appropriate to the MPP degree will be considered for approval.

Waiver of Courses

If admitted, students who enter the MPP program from a graduate program at another university may request to waive a core MPP course if a graduate-level course of equivalent content has been taken. To request a waiver, a student must submit a request form, course description, and syllabus before the first semester of matriculation. The waiver request will be reviewed by the Program Director. If approved, the student should take an elective to replace the core course. Completion of 15 course units (CUs) are still required to complete the degree. Courses taken outside of the University of Pennsylvania during a student’s matriculation in the MPP program are not eligible for a waiver.

Financial Aid

There are several funding opportunities available to Master of Medical Physics students at the University of Pennsylvania, including:
• Partial stipends for select first-year students acting as research assistants
• Employment opportunities for second-year students working in the Roberts Proton Therapy Center performing quality assurance measurements
• Partial stipends available to select second-year students acting as teaching assistants for select first-year courses
• Part-time employment opportunities (non-work study positions)

Research and teaching assistantships are limited in number and awarded selectively.

United States citizens and permanent residents are eligible to apply for loans through the University of Pennsylvania’s Office of Student Financial Services, http://www.sfs.upenn.edu/. Full-time students (students taking three or more courses in a semester) are eligible for full loan support. Part-time students (students taking one or two courses in a semester) are eligible for partial loan support. International students are not eligible for loans through the University. Students are encouraged to seek out scholarship support on their own.

VI. Student Advising and Course Registration Procedures

Student Advising
The MPP Program Director is the primary academic advisor for all students in the program. The Program Director reviews academic performance of the students and advises on course, career, and research options. The Program Director advises students who are not meeting academic standards and provides advice for successful completion of the program. At any time, students may request an advising appointment with the Program Director by contacting the Program Coordinator.

Students should use the student plan of study worksheet available on Penn InTouch, available via the Penn Portal at https://portal.apps.upenn.edu/penn_portal/portal.php to help plan their courses and monitor program progress. Students with questions about course logistics should contact the Program Coordinator.

Course Selection

The University’s Course Register, available online at http://www.upenn.edu/registrar/register/index.html, provides course descriptions for many courses offered at the University of Pennsylvania. Departmental web pages often include course descriptions as well. In addition, the Course Timetable may be found online at http://www.upenn.edu/registrar/timetable.

Advance Registration

The course registration process involves two registration periods. The first is Advance Registration during which students enter their requests for courses they wish to take. Students are encouraged to register during this period so that they have the best chance of getting into the courses they prefer. At the end of Advance Registration, a scheduling program processes all registration requests at the same time to determine who gets enrolled in the courses that have been requested. Students may advance register during a two-week period starting in late March for the following Summer and Fall terms and during a two-week period in late October or early November for the following Spring term. Check the LPS website (http://www.sas.upenn.edu/lps/calendar) and/or the Registrar’s website for the exact dates for Advance Registration. The MPP program will contact all incoming students with information about specific courses in which you will need to enroll.

Registration

The Regular Registration Add/Drop period opens approximately three weeks after the Advance Registration request period has closed and students have been notified of their schedules. During the Regular Registration period students know immediately whether or not they will be able to enroll in the course they are requesting. Students may register for courses through the Penn InTouch on-line registration system or with the assistance of the MPP Program Coordinator. Registering through Penn InTouch requires the use of a computer and access to the internet.

In order to access the system, students must have a PennKey. To establish a PennKey, go to http://www.upenn.edu/computing/pennkey. A PennKey setup code will be mailed to
each new student’s home address to set up a PennKey. The Penn InTouch web address is https://medley.isc-seo.upenn.edu/penn_portal/intouch/splash.html.

Some important information to remember when registering for courses:

- Courses must be taken for a normal letter grade in order to count toward the MPP degree.
- Only courses numbered 400 and above may count toward the degree; for example, PHYS 531 counts but not PHYS 240. The first set of three digits after the course subject is the course number.
- As a master’s student, permission may be needed from the instructor to register for some graduate courses in other departments or schools.
- Full-time MPP students will enroll in three or four courses. Students are not permitted to enroll in more than four courses per semester.
- Part-time MPP students may enroll in one or two courses per semester.

Permits

Courses that require special permission from the instructor are indicated in the Course Timetable as “Permit Required.” Permits are obtained from the instructor and entered electronically into the Student Record System (SRS) by the department offering the course. A permit is not a registration. Students must “claim” the permit by actually enrolling in the course through Penn InTouch. After both Advance Registration and Regular Registration are complete, the Registrar’s Office removes unused permits from students’ records.

Independent Study Courses

Students interested in pursuing an individualized study project should obtain a “Request for Independent Study” form from the MPP Program Coordinator. The student should then approach a faculty member and obtain agreement from them to direct their project. It is the responsibility of the student to define the individualized project. Students should not approach a faculty member and request that they define a project for the student. Students must obtain the appropriate signatures from their advisor and the MPP Program Director. Independent Study courses may not duplicate other courses offered during the same semester. Students should bear in mind that faculty members are not required to supervise an Independent Study course. MPP students may register for up to two Independent Study courses during their career.

Auditing Courses

MPP students may audit courses. However, they will be charged tuition and fees at the MPP tuition level. Audited courses will appear on the student’s transcript, but no grade will be issued and the course will not count toward the 15 courses needed to complete the program. Most courses are open to auditors on a space-available basis.

Registering for Non-MPP Courses
MPP students may register for graduate courses in other University departments and schools as electives, if those courses are appropriate to their program. Students should consult with the MPP Program Director to determine if the course is appropriate before registering. MPP students may need permission to register for courses outside the MPP program. In such cases, students should contact the instructor of the course they wish to take. Students may also need the approval of the Graduate Group Chair of the department in which the course is offered. Students wishing to take courses outside of the MPP program may not be able to register until all students in the home department or school have had a chance to register. Permits will then be issued on a first-come, first-served basis.

Course Changes

MPP students are subject to LPS registration and drop/add deadlines which may be different than deadlines for other schools and departments. Students should consult the current LPS Course Guide or the LPS web site for deadline dates for making registration changes and for the corresponding financial obligations (http://www.sas.upenn.edu/lps/calendar). Adherence to LPS deadlines is strictly observed. Should students need to drop or withdraw from a course beyond the deadline, they should contact the MPP Program Director. It may be necessary to provide documentation of the situation that necessitates the drop or withdrawal, particularly if the student is requesting a refund of tuition.

Adding a Course

Students may add a new course through the second week of the term. After that it is not possible to add a course. Students may add a course via Penn InTouch until the posted last day to add a course, posted on the LPS academic calendar at http://www.sas.upenn.edu/lps/calendar.

Dropping a Course

Students may drop a course with no financial obligation until the published deadline in the current LPS academic calendar (approximately two weeks into the term), posted at http://www.sas.upenn.edu/lps/calendar. Students may also drop a course between the second and fourth weeks of the term, but in so doing they will incur a 50% financial obligation for the tuition and fees for the dropped course. Neither absence from class nor notifying the instructor constitutes a drop. Students can officially drop a course through Penn InTouch through the second week of the term. After the second week of the semester, students must contact the MPP Program Director directly to drop a course. When making registration changes via Penn InTouch, it is always advisable to double check to ensure the changes have taken effect before logging out. Students who fail to drop a course officially may receive a grade of “F” and will be required to pay the full tuition rate.

Changing Grade or Credit Status of a Course
All MPP courses must be taken for a letter grade. However, students may register for courses that they do not want to count for their programs on an audit or Pass/Fail basis. Before doing so, however, they should discuss this with the MPP Program Director. Once they have done so, students may change their status in a course from credit to audit, from a letter grade to Pass/Fail or from Pass/Fail to a letter grade until the published deadline in the current LPS academic calendar (approximately four weeks into the term). No change is permissible after the published deadline. Auditors pay full tuition and fees.

**Withdrawing from a Course**

Students may withdraw from a course after the deadline to drop a course has passed (approximately four weeks into the term). To withdraw, students should discuss the reason with the MPP Program Director and complete an LPS withdrawal form. A “W” (withdrawal) is recorded on the transcript.

After the published withdrawal deadline, students are permitted to withdraw only under extraordinary circumstances, which must be documented. To withdraw, students should discuss the reason with the MPP Program Director and complete an LPS withdrawal form. Additional documentation justifying the request may be required. LPS administration will review the request and communicate a decision to the student. If permission is granted, a “W” (withdrawal) is recorded on the transcript.

Students who withdraw from a course have full financial obligation, except in documented cases of illness, military service, or other extraordinary circumstances, when they may petition for a 50% refund.

Note: Dropping a course is not identical to withdrawing from a course. Withdrawing from a course takes place after the sixth week of class and carries with it full financial obligation. A student’s transcript will read “W” (Withdrawal) next to the title of the course. However, if a student drops a course during the normal Add/Drop period, no record of that course will appear on the transcript.

**Academic Grievances**

The instructor who gives an evaluation, exam, or course grade has sole authority for changing such evaluation, exam, or course grade provided the instructor remains on the faculty (or the emeritus faculty) of the University of Pennsylvania. In cases in which faculty appointments have terminated, or faculty have resigned or are deceased, sole authority for changing an evaluation rests with Program Director. LPS students who wish to have an evaluation, exam, or course grade reviewed must first discuss the matter with the instructor who gave the evaluation unless the instructor is no longer a member of the University of Pennsylvania faculty or emeritus faculty. Should this meeting not yield a resolution that is satisfactory to both the student and the instructor, or not be possible, the student may ask the Program Director for assistance in the matter.

A student who has a concern about any other matter related to a course should first discuss the matter with the instructor of the course. Should this meeting not yield a resolution that is satisfactory to both the student and the instructor, or not be possible, the
student may ask the Program Director for assistance in the matter.

Should the matter not be resolved with the aid of the Program Director, then the student may seek the assistance of the Executive Director of LPS. The role of the Executive Director is limited to ensuring that the department or program has arranged for a proper review of the matter.

VII. University Policies and Procedures

The PennBook

Most University policies, procedures, and University resources can be found in the PennBook, which can be found online at https://provost.upenn.edu/policies/pennbook. Read through the information carefully, as all members of the University community are expected to know and follow these policies.

Enrollment Status

MPP students who are enrolled for at least three courses per term are considered full-time students and will be billed the full general fee. This fee covers access to many of the services described below. MPP students enrolled in one or two courses per term are considered part-time students.

Code of Academic Integrity

Inasmuch as the standing of an educational institution and the value of a degree from that institution are dependent upon the integrity of study and research carried on at that institution, the Code of Academic Integrity is drawn to make clear the policy of the University concerning academic honesty. Each student attending the University must abide by this code, the text of which appears in the PennBook can be found online at http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html.

Confidentiality of Student Records

Pursuant to the Family Educational Rights and Privacy Act of 1974, as amended, in general, personally identifiable information can be disclosed to people outside the University only with the written consent of the student or alumnus/na involved. A statement setting forth specific University policy concerning (1) disclosure of information to people outside the University, (2) disclosure of information to people within the University, (3) permitting students to inspect and review records and (4) providing students with the opportunity to seek the correction of their records appears in the PennBook and can be found online at https://provost.upenn.edu/policies/pennbook/2013/02/13/confidentiality-of-student-records.

Nondiscrimination Statement
The University of Pennsylvania values diversity and seeks talented students, faculty and staff from diverse backgrounds. The University does not discriminate on the basis of race, color, sex, sexual orientation, gender identity, religion, creed, national or ethnic origin, citizenship status, age, disability, veteran status or any other legally protected class status in the administration of its admissions, financial aid, educational or athletic programs, or other University-administered programs or in its employments practices. Questions or complaints regarding this policy should be directed to:

Executive Director of the Office of Affirmative Action and Equal Opportunity Programs
Sansom Place East
3600 Chestnut Street, Suite 228
Philadelphia, PA 19104-6106
215.898.6993 (Voice)
215.898.7803 (TDD)

Student Responsibility

While advisors, faculty, and staff will assist students in every aspect of their graduate study, it is the responsibility of the students to ensure that all steps and necessary paperwork have been completed and submitted to the MPP Program Director and or LPS as appropriate. Grant proposals, awards, accepted publications and other records of achievement should also be submitted to the MPP Program Director.

VIII. University Systems Access

Social Security Number

A valid Social Security number is required for matriculation. This number will be used as a student identification number during the matriculation process. Once a student is enrolled, a student identification number (Penn ID) will be issued and used for registration and other transactions throughout the University of Pennsylvania. A student who does not have a Social Security number may obtain one by contacting the local Social Security Office. International students will be issued a student ID number to be used for all University transactions upon enrollment.

PennCard

The PennCard is the official University of Pennsylvania identification for students, faculty, and staff. The PennCard provides access to University facilities, services, cash convenience and more. To obtain a PennCard, students should bring a valid form of photo ID (driver’s license, passport, etc.) to the PennCard Center, 150 Franklin Building, 3451 Walnut Street. There is no charge for your initial PennCard. Only active students registered for courses in the current or upcoming term may receive a PennCard, which should be carried at all times. For more information visit cms.business-services.upenn.edu/penncard.

PennKey
A PennKey is required to authenticate, or verify, an individual’s identity for many of the University’s networked computer systems and services. Authorized users need a PennKey and password to access such resources as Penn InTouch (course registration), Blackboard (used in most classes), certain library resources, and public campus computers. A PennKey is also required to obtain a University of Pennsylvania email address. New students should receive a letter with information on how to create a PennKey and password within a few days of their admission to the MPP program. For more information visit http://www.upenn.edu/computing/pennkey.

Penn InTouch

Penn InTouch provides secure access via the Internet to online course registration, class schedules, academic records, future academic planning, billing, financial aid application status and awards, address corrections and updates, and student health information. A PennKey is required to access Penn InTouch at https://medley.isc-seo.upenn.edu/penn_portal/intouch/splash.html.

Email

All students enrolled at the University of Pennsylvania are eligible for a University email address free of charge. Even if the student plans to use a non-University email account, they should also establish a University of Pennsylvania address. The Medical Physics Program staff will send out program information to this address and also contact students with important information through this system. Course instructors will be given this address as well and will expect to contact students in this way. Should students wish, they may forward email from their University address to another account through the University of Pennsylvania’s webmail site. Instructions on how to create and use a University email account are available through SAS Computing at http://www.sas.upenn.edu/computing/help/students/email. Students can arrange to forward email from their University account to another account at https://webmail.sas.upenn.edu/. Follow the link to “Manage Account” before logging in.

IX. University Student Services & Resources

The Graduate Student Center publishes a Campus Resource Guide each year for all graduate and professional students at the University of Pennsylvania. Campus Resource Guides are available in print form (pocket-sized) at the Graduate Student Center and available for download at http://www.gsc.upenn.edu/resources/guide/. A comprehensive listing of all academic resources and university support services are contained in the Campus Resource Guide, and should be considered a primary resource for graduate students.

Academic Support Services

Weingarten Learning Resources Center
http://www.vpul.upenn.edu/lrc/
3702 Spruce Street, Suite 300, 215.573.9235
The Weingarten Learning Resources Center provides professional instruction in skills such as academic reading, writing, study strategies, and time management free of charge to Penn students. Workshops are offered regularly. Individual appointments and walk-in hours are available.

The Critical Writing Program
http://writing.upenn.edu/critical/graduate_students/help_with_your_writing.php
The Marks Family Writing Center, part of the Critical Writing Program, provides graduate students in credit-bearing programs with free writing consultation. Sessions for graduate students are by appointment only and are held at the Weigle Information Commons at Van Pelt Library.

Bookstore
http://upenn.bkstore.com/
3601 Walnut Street
The University of Pennsylvania Bookstore carries textbooks and trade books as well as stationery, art supplies, school supplies, gifts, and other items. There is also a check cashing service, notary, SEPTA token machine and ATM located within the store. The Computer Connection, within the bookstore, carries computers, software, and computer supplies.

Note that many faculty use the Penn Book Center to order their course texts. The Book Center is located at 130 S. 34th Street and can be reached at 215.222.7600 or online at http://www.pennbookcenter.com.

Career Counseling
The University provides career counseling through the Career Services office. Students may create a file of recommendations and transcripts that can be provided to potential employers or forwarded to graduate schools. The Career Services office is located in the McNeil Building at 3718 Locust Walk, Suite 20. Appointments can be made by contacting the office at 215.898.7530 or online at http://www.vpul.upenn.edu/careerservices/.

Computer Resources

For a current list of computer labs on campus, visit http://www.upenn.edu/computing/view/labs/.

Information on how to use wireless connections in DRL may be found in Section III of this handbook.

Counseling, Support and Crisis Intervention

Public Safety Special Services Unit Hotline
The Special Services Hotline at 215.898.6600 provides crisis intervention and support, escort to the hospital, assistance with police administration and/or court proceedings,
transportation, temporary housing and other assistance to help you overcome a traumatic event. For general Special Services business, call 215.898.7297.

Counseling
Counseling and Psychological Services (CAPS) fosters personal growth to enable Penn students to take full advantage of academic and social opportunities at Penn. Students learn to manage personal challenges, psychological problems, and situational crises and develop strategies to cope with academic stress and skills for life-long learning. CAPS also provides professional psychological and psychiatric services to students who are having personal problems involving social, emotional, academic, and career issues. The most frequent concerns are poor academic performance, stress management, depression, anxiety, low self-esteem, eating problems, drug and alcohol abuse, racial/ethnic identity issues, relationship conflicts, sexual identity concerns, career conflicts, and loss/grief. Services are free and confidential.

For information on scheduling an appointment, visit http://www.vpul.upenn.edu/caps/ or call 215.898.7021 during normal business hours. Clinicians are available for confidential counseling, consultation and psychotherapy on a walk-in basis or by appointment during office hours. After-hours calls are referred to the CAPS clinician on call.

Counseling Emergencies
If you are experiencing an emergency that cannot wait until CAPS next day office hours, please call the HUP operator at 215-349-5490 and ask for the CAPS clinician on call.

Please note that this HUP operator number is only for emergencies.

Suicide Prevention Hotline
Please call 215.686.4420 24 hours a day, 7 days a week.

Rape Counseling
Please call the Women Organized Against Rape (WOAR) hotline at 215.985.3333 (available 24 hours a day, 7 days a week). WOAR provides telephone counseling, crisis intervention, emergency room counseling, and other follow-up services and referrals for victims of sexual assault.

Emergency Phone Numbers

Fire, Police and Medical Emergencies
Call 511 to reach University Police.

Tell the dispatcher that you need an ambulance and stay on the phone until you have given the location of the emergency. If you can, stay with the patient until University Police arrive. If the Philadelphia Police or Fire Department arrives before the University Police, inform the attendant or police officer that the patient is to be taken to the Hospital of the University of Pennsylvania emergency services unit. In cases of drug or alcohol overdose, the primary concern of the University Police is the safety of the individual, not prosecution and punishment.

Other Medical Emergencies
Student walk-in emergencies are handled at the Student Health Service located at 3535 Market Street, Suite 100. When Student Health is closed, students should go to the HUP emergency services unit in the Silverstein Pavilion, 3400 Spruce Street.

Off-campus
Call 215.573.3333 to reach University Police or 911 to reach Philadelphia Police. Call 911 to reach the Philadelphia Fire Department.

Graduate Students Resources

Graduate Student Center
The Graduate Student Center (GSC) is the only hub on campus specifically for graduate and professional students. It provides a common area for meeting other students, meeting and study group space, academic support, and personal enrichment and social programs. The GSC is located at 3615 Locust Walk and can be reached at 2415.746.6868 or online at http://www.gsc.upenn.edu/.

GAPSA
The Graduate and Professional Student Assembly (GAPSA) serves as the University-wide student government for all graduate and professional students, functioning as the advocate and political representative body for these constituents. GAPSA also sponsors activities, elects representatives for University-wide committees, provides funding for student organizations and for students attending conferences. GAPSA can be found online at http://gapsa.upenn.edu/.

Housing
A wide range of housing options are available to graduate students at the University of Pennsylvania. On campus, graduate students can choose to live at Sansom Place, which accommodates graduate and undergraduate students. Alternatively, a limited number of graduate staff positions provide subsidized room and board in a College House or at Sansom Place. For more information on this option, visit http://www.business-services.upenn.edu/housing/graduate.html.

A variety of off-campus housing options are available as well. Penn’s Office of Off Campus Services (OCS) at 3702 Spruce Street is designed to assist students at all stages of their off campus living experience. For more information contact OCS at 215.898.8500 or visit http://www.upenn.edu/offcampusservices.

Libraries
Van Pelt Library, the main University library, is located at 3420 Walnut Street (the entrance is on the College Green across from College Hall). For information about holdings and hours for each of the University libraries, visit http://www.library.upenn.edu/homepagenew.html.

The Physics and Astronomy Library is located on the third floor of David Rittenhouse Laboratory (DRL) building at 209 S. 33rd Street where most of your physics courses will
take place. You will find helpful and current information on physics topics relevant to your coursework. For more information, contact the library at 215.746.0228 or visit their website at http://www.library.upenn.edu/scitech/mpa/.

Office of the University Ombudsman

The Office of the Ombudsman assists individuals in finding solutions to problems that they may not be able to resolve through normal channels. The office is concerned with safeguarding individual rights and promoting better channels of communication throughout the University. It is independent of all administrative offices. The Ombudsman is not an advocate for any one individual or group. He or she is an advocate for fairness, adherence to University regulations, due process, and personal responsibility. The Office supplements, but does not replace, any existing grievance mechanisms or modes of redress. It can and does recommend changes in the existing rules and practices when necessary. The Office of the Ombudsman can be reached at 215.898.8261 or online at http://www.upenn.edu/ombudsman.

Recreation Facilities

MPP students have access to all of the recreation facilities available to the University community including the Pottruck Health and Fitness Center, intramural leagues, group exercise, massage therapy and more. The Department of Recreation can be reached at 215.898.6100 or online at http://www.upenn.edu/recreation/.

Student Disabilities Services

Penn is committed to providing equal education opportunities for all students, including students with disabilities. The Office of Student Disabilities Services (SDS) provides comprehensive professional services and programs for students with disabilities to ensure equal academic opportunities and participation in University sponsored programs. Reasonable accommodation to a qualified student’s known disability may be provided to ensure equal access. The University invites students with disabilities to identify themselves at any time during their course of study as enrolled students. Although the self-identification process is confidential and completely voluntary, it is required for those requesting accommodation. SDS can be reached by phone at 215.573.9235, by TDD at 215.746.6320 or online at http://www.vpul.upenn.edu/lrc/sds/index.html.

Student Financial Services

Student financial aid, including applications and disbursement of money, are handled through Student Financial Services (SFS). SFS is located in the Franklin Building at 3451 Walnut Street, Suite 100 and can be reached at 215.898.1988 or online at http://www.sfs.upenn.edu.

Weather Emergencies

Severe weather, such as winter storms, may force the closing of non-essential offices and the cancellation of classes. To find out the operating status of the University in the event
of severe weather, call the special information number: 215.898.MELT and/or listen to KYW (1060 AM) for school closing announcements. The University’s number is 102 for daytime classes and 2102 for evening classes.

X. University Student Health

Student Health Information

The University has a number of health-related requirements for students. These include completion and submission of health and immunization records, coverage for outpatient medical care through the Student Health Service (SHS) and maintenance of health insurance coverage for in-patient and catastrophic care. Students are advised to call SHS at 215.746.3535 or consult their web site at http://www.upenn.edu/shs for the most current information on student health requirements.

Student Health Insurance

The University requires all full-time students to maintain medical insurance with coverage for in-patient care and catastrophic illness and injury. Students may satisfy insurance requirements through private or employer-sponsored plans or through enrollment in PSIP. All full-time students must either enroll in PSIP or submit a waiver indicating alternative coverage. Students who fail to provide information about coverage will be enrolled in and billed for PSIP. Part-time students may enroll voluntarily in PSIP, but they are not subject to the insurance requirement, and will not be enrolled by default in PSIP. Coverage for the Student Health Service (either through the Clinical Fee or through enrollment in PSIP) is optional for part-time students.

Student Health Service

The University provides outpatient medical care to students through its Student Health Service. SHS offers an array of clinical services, including initial and follow-up treatment of acute medical illness and injury, management of chronic health problems, health screening and preventive care. All full-time students must carry coverage for care at the Student Health Service, either through payment of the Clinical Fee or through enrollment in the Penn Student Insurance Plan (PSIP). Full-time students who have private or employer-sponsored insurance do not have to purchase the student plan, but they must still pay the clinical fee for coverage at the Student Health Service. Coverage for the Student Health Service (either through the clinical fee or through enrollment in PSIP) is optional for part-time students. The Student Health Clinic is located at 3535 Market Street, Suite 100. Be sure to bring your PennCard and insurance information whenever you go for medical care. SHS can be reached at 215.746.3535 or online at http://www.vpul.upenn.edu/shs/.

Immunization

Students enrolled in the MPP program are part of the University community and benefit from the University’s efforts to provide a safe and healthy environment. All MPP
students are required to comply with immunization requirements upon first enrolling in credit courses.

Penn requires all incoming students to be immunized against certain diseases and to submit this information online. Please visit http://www.vpul.upenn.edu/shs/immunization.php for additional information on fulfilling immunization requirements.

In the event of an outbreak of a communicable disease in any University class, all students in that class would be required to comply immediately with the University’s immunization requirements.