

Department of Medical Physics

**University of Wisconsin
Madison**

Student Handbook



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Department of Medical Physics
University of Wisconsin
1111 Highland Avenue
1005 Wisconsin Institutes for Medical Research
Madison, WI 53705-2275

Policy

In conformance with applicable federal and state regulations, UW-Madison does not discriminate on the basis of race, sex, handicap, religion, age, national origin, or veteran's status with regard to treatment of students in the educational programs or activities which it operates. Inquiries concerning this policy may be directed to appropriate campus admitting or employing units or to the Affirmative Action Office, 175 Bascom Hall.

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Information About the Department of Medical Physics

Introduction

The University of Wisconsin-Madison is spread out on a series of wooded glacial hills along the south shore of Lake Mendota, less than a mile from the State Capitol. Since its founding in 1849, the University has matured to become one of the nation's leading institutions of higher learning. It combines teaching and research in basic humanities and sciences with professional education in a wide range of fields. The University has grown to accommodate approximately 44,000 students while continuing to emphasize quality in all its activities.

Madison, the vibrant capital of Wisconsin and home of the University of Wisconsin, has the best of all worlds: natural beauty and outdoor recreation, a vibrant downtown, stimulating cultural offerings, distinctive restaurants and shops, and an atmosphere that is nurturing both to families and individuals. Built on an isthmus between lakes Monona and Mendota, Madison is renowned for its beautiful scenery. A total of five area lakes and more than 260 city parks create the perfect setting for an abundance of year-round outdoor activities.

The Department Of Medical Physics

Medical Physics is a branch of applied physics. It uses concepts and methods of physics to help diagnose and treat human disease, but has become very specialized as a discipline. The UW Medical Physics Department offers graduate training and education in radiological physics and dosimetry and in functional, anatomical, and interventional medical imaging. New procedures, including ablation therapy, molecular imaging, optical imaging, photoacoustic imaging, and biomagnetism also are included in the curriculum and research.

The Department of Medical Physics is one of 10 Basic Science Departments and 17 Clinical Departments in the UW School of Medicine and Public Health (SMPH). Graduate work in this department prepares students for professional positions in teaching, research or service in medical centers, national laboratories, universities, governmental regulatory agencies, and in the medical and nuclear technology industries. Financial support for the department comes from the SMPH, research grants and contracts, and revenue-producing operations. The base budget for SMPH support follows a process known as Mission Aligned Management and Allocation, or MAMA. The SMPH supports medical physics in its mission of teaching, research, and service, with formula budget lines related to faculty contributions in each of these areas.

The Department of Medical Physics maintains close collaborative ties with other UW SMPH departments, including Human Oncology, Medicine, Neurology, Neurological Surgery, Radiology, and Psychiatry, as well as departments in others schools and colleges, including Physics, Biomedical Engineering, Nuclear Engineering, and Engineering Physics. The department also has close ties with the School of Veterinary Medicine, the National Primate Research Center, and the Morgridge Institute for Research. Many faculty members hold joint appointments, principally in Radiology, Biomedical Engineering, and/or Human Oncology. These cross-links broaden the scope of the research opportunities open to graduate students and provide access to additional equipment and facilities, such as linear accelerators, magnetic resonance imaging (MRI) equipment, X-ray computed tomography (CT) scanners, ultrasound scanners, optical imaging equipment, and positron emission tomography (PET) scanners.

The Medical Physics Department has access to many unique imaging research facilities in its location in the Wisconsin Institutes for Medical Research (WIMR), adjacent to UW Hospital and Clinics (UWHC) and to the SMPH Health Sciences Learning Center (HSLC). State of the art

MRI scanners, CT scanners, ultrasound scanners, angiography systems, and a biomagnetism suite are located on the first floor of WIMR I and are shared with Radiology for carrying out imaging research. A PET-Trace cyclotron facility, radiochemistry labs with automated synthesis modules, GMP Radiopharmaceutical Production Facility, two PET/CT systems, a PET/MR system, a machine shop, and the Medical Radiation Research Center (MRRC) and Accredited Dosimetry Calibration Lab (ADCL), with a Varian 21EX linac dedicated to research and education, are located one floor down. Also in the WIMR I basement is the Small Animal Imaging Lab, with optical, SPECT/CT, PET, MRI, and ultrasound/photoacoustic imaging systems. Graduate students engaged in research in any of these modalities often are trained to use these facilities.

The Department's ADCL is one of three in the U.S. accredited by the American Association of Physicists in Medicine. In addition, the Department serves UW Hospitals and nearby medical centers by providing Diagnostic Imaging Equipment Quality Assurance programs. Finally, many unique opportunities for Medical Physics trainees are provided by faculty in the adjacent Radiation Oncology center (Department of Human Oncology Physics Section).

Degrees Offered

The Department of Medical Physics offers programs of study leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Medical Physics. The program is structured so the student may emphasize the conventional areas of radiation therapy physics and metrology, image science, or health physics, or may develop a plan of study outside of these areas of concentration. The M.S. degree, however, may not be an optimal terminal degree for a career as a Clinical Medical Physicist in the future as currently-available data demonstrate that Medical Physics Residency Program opportunities are more challenging to obtain with an M.S. degree versus a Ph.D. degree. The Ph.D. degree is primarily a research degree that extends the student's depth of knowledge in a specialty area. Faculty positions at universities, research positions, positions in industry, and many clinical physics positions require a Ph.D. degree.

CAMPEP Core Curriculum Track

All students in the Medical Physics Program, are required to take 9* Core Curriculum courses, namely MP501, MP563, MP566, MP567, MP569, MP573, MP575*, MP568*, and MP701 along with associated laboratories (totaling 26 credits), prior to advancing to dissertator status. These core courses, along with an acceptable course in anatomy / physiology, satisfy the Commission on Accreditation of Medical Physics Education Programs, Inc. (**CAMPEP**) core course requirements as defined in the *Standards for Accreditation of Graduate Educational Programs in Medical Physics*. This Core Curriculum requirement is effective for students matriculating in or after Fall 2014. Students may petition the Medical Physics Graduate Committee to replace one or more courses from the Core Curriculum with an alternative course or courses. The student must provide the Medical Physics Graduate Committee a written explanation describing his/her reasoning for requesting the change. If the student's advisor is a member of the Medical Physics Graduate Committee, he/she will be recused from discussion of the petition. If the request is granted, the student will receive a written communication, to which he/she must agree in writing, stating he/she will not satisfy or be eligible to receive a CAMPEP core curriculum completion attestation unless the core course(s) replaced by alternate course(s) are ultimately taken (along with an acceptable course in anatomy / physiology).

* At this time, MR575 and MP568 are part of a combined course, MP578. The courses will become separate in the near future.

Clinical Physics Positions: ABR Board Certification

For those interested in careers in clinical Medical Physics, it is important to note that many clinical Medical Physics positions require certification by a certification board, the most common being the American Board of Radiology (ABR). Please be aware of eligibility requirements for ABR board certification exams. The exam is given in three parts. Part 1 tests basic radiological physics and clinical aspects of radiological physics, including physiology and anatomy. Prerequisites include appropriate undergraduate physics education (at least three upper level physics courses required of a physics major, or equivalent) and an advanced degree in physics or medical physics. Candidates enrolled in a CAMPEP-accredited medical physics graduate program, such as here at UW-Madison, are eligible to take Part 1 during their graduate training.

Part 2 has a choice of three separate tests: a) Diagnostic Medical Physics; b) Nuclear Medical Physics; and c) Therapeutic Medical Physics. Besides didactic training, eligibility for Part 2 includes clinical training, which, starting with individuals taking Part 1 in 2014 and later, must be accomplished in a CAMPEP approved residency program.

Part 3 is an oral examination designed to test knowledge and fitness to practice Medical Physics in one or more of the specialty areas of Diagnostic Medical Physics, Nuclear Medical Physics and Therapeutic Medical Physics. The candidate is examined by five physics examiners, each of whom asks questions in five categories related to the specialty area(s). Detailed information on the ABR's Medical Physics Certification examination process can be obtained on its [website](#).

For those students who are interested in ultimately obtaining ABR board certification, it is important to ensure all CAMPEP graduate education requirements are met. The breadth of the UW graduate program is such that it is possible to obtain a M.S. or Ph.D. degree in our department for students who 'opt out' of the Core Curriculum without satisfying all CAMPEP core course requirements as described in the [Standards for Accreditation of Graduate Educational Programs in Medical Physics](#). (Please see *CAMPEP Core Curriculum Track*, above.) It is up to the student to plan his/her courses accordingly to be sure he/she has satisfied all requirements.

Appointments and Personal Assistance

Admissions Policies

Students admitted to the UW Medical Physics Program will have satisfied all relevant requirements of both the Medical Physics Department and the UW Graduate School. Requirements and admissions information for the Medical Physics Department are available at <https://www.medphysics.wisc.edu/graduate/>. The UW *Graduate School Catalog* provides information on Graduate School requirements.

Students who entered the Medical Physics Program with an advanced degree (M.S. or Ph.D.) in a field other than medical or radiological physics must take our introductory courses, unless equivalent coursework has been completed elsewhere, and must take the Medical Physics Oral Ph.D. Qualifying Exam to pursue a doctoral degree. The master's degree in Medical Physics is a prerequisite to the Ph.D. If a student has already received a master's degree in medical or radiological physics elsewhere, it may be possible to enter the program here with intent to begin immediately working toward the Ph.D., taking only those M.S. required courses which were (in the opinion of the Graduate Committee and course instructors) inadequately covered in the previous course of study. A student may be excused from taking any required course if, in the judgment of the course instructor(s) and the Graduate Committee, an equivalent course has been successfully completed elsewhere. However, the credit requirements for the Ph.D. have to be met over the course of study. (See also the sections on Residence Credit Reduction (page 17 for M.S. degree; page 34 for Ph.D. degree).

Financial Assistance

Financial assistance is available in the form of fellowships, research assistantships, project assistantships, traineeships, and teaching assistantships. Such support is limited in availability and is not an automatic consequence of being accepted into the graduate program.

Some students who are accepted for graduate study in Medical Physics receive partial financial support as research assistants or project assistants. These Research Assistant (RA) and Project Assistant (PA) positions are filled on the basis of competence, relevant experience, and financial need. A student who does not receive such an appointment in the first semester may possibly do so later, depending upon availability of financial resources such as grants and contracts. In no case, however, should a student assume that such support will be forthcoming unless so notified in writing by a faculty member of the Department of Medical Physics.

A limited number of Teaching Assistant (TA) positions are available in the department. These usually are awarded to advanced students who have taken the courses for which TAs are hired. Discuss working as a TA with specific course instructors and the Department Administrator.

The Medical Physics Department also has an NIH NRSA Training Grant, which supports select students completing their Ph.D. research. Nomination for a training grant position is made by the student's advisor. In most cases, students must have reached dissertator status to be considered for a training grant position. Other training grant opportunities also are available, but these usually are directed towards entering students and are administered by other basic science departments. Included here are the Biotechnology Training Grant and the Neurosciences Training Grant.

For a graduate student in the Medical Physics Department who is a research assistant, fellow or trainee, he/she must carry at least 8 credits during regular semesters and 2 credits during the summer. Students who have achieved dissertator status must register for 3 credits at all times,

with at least 1 credit being Research (MP990). PA's and TA's must register for at least 2 or more credits in the fall and spring semesters; summer registration is not necessary for PA's and TA's. In most cases, to be eligible for financial support, a student must be making satisfactory progress as defined by the department and the Graduate School.

Lab Rotations

Lab rotation opportunities are available to students who have funding and have not as yet become aligned with a research group. These one-semester 'lab rotations' provide the opportunity for students to better evaluate the labs and working environment associated with a potential mentor. It also allows the faculty to better evaluate students being considered for their research teams.

Students are not required to participate in these rotations. Some students enter the Medical Physics program knowing which research group they want to work with and secure RA positions immediately. There are generally a limited number of openings in each group, and those positions might be filled before the end of the rotations. It is in the student's best interest to join a research group as soon as possible, even while completing their rotations. (Students who are supported by the Biotechnology Training Program, BTP, training grant must satisfy the requirements of that program and do not formally choose an advisor until rotation requirements are completed.)

Students with Disabilities

Support services can be found at the McBurney Disability Resource Center, which is located at 702 West Johnson Street, Suite 2104. The phone number is (608) 263-2741 and the TTY number is (608) 263-6393. Their e-mail address is mcburney@odos.wisc.edu and their web site can be found at <http://www.mcburney.wisc.edu>.

Personal Safety, Harassment, Discrimination, and Diversity/Inclusion

While there are many resources and activities designed to help you stay healthy and safe, three in particular are SAFEwalk (evening walking escorts), University Health Services (UHS), and the University Police.

Sexual harassment and sexual assault are important issues and are not tolerated in the UW-Madison community. UW-Madison offers a place to go if you believe that you are a victim of sexual assault (<http://uwupd.wisc.edu/tellus>). The Office for Equity and Diversity provides extensive online documentation and contact information, including webpages on *Sexual Harassment Information, Safety and Sexual Assault*, and an online *Sexual Assault Reporting Form*. One may also contact the Office for Equity and Diversity at (608) 263-5562. The Office for Equity and Diversity website is also an important resource for information on discrimination.

Finally, the Dean of Students Office website is an excellent source of information and provides a convenient single web access point for issues related to personal safety, harassment, discrimination, diversity/inclusion, hate and bias issues and reporting of any such events, multicultural student services, LGBT resources and information, options for reporting a student of concern, etc.

Campus Police

The phone number for campus police is 608-264-2677. Of course, if there is an emergency, dial 911.

First-Semester Student Survival Checklist

- _____ Check in with Medical Physics Departmental Office
 - _____ Meet Graduate Program Coordinator (*Information*)
 - _____ Meet with the HR, Payroll and Benefits Specialist (*Keys, After Hours Entry*)
 - _____ Meet and talk with your Advisor
 - _____ Find your mail box
 - _____ Complete any necessary paperwork (*RA – Insurance forms, Direct Deposit form*)
For info on benefits package, see <http://www.ohr.wisc.edu/benefits/>
 - _____ Register for Courses (*You **MUST** be registered to get ID card, open e-mail account, get bus pass*)
 - _____ Get your Student ID card (*remember to bring identification*) <http://wiscard.wisc.edu/>
 - _____ Open your free student e-mail account at <https://www.mynetid.wisc.edu/activate>
 - _____ Verify your mailing address on **My UW** at: <http://my.wisc.edu>
 - _____ Pay your tuition/fees at the Bursar's Office (*watch deadlines*)
 - _____ Attend Department Orientation Activities
 - _____ Complete Mandatory HIPAA Training
 - _____ Attend *New Graduate Student Celebration and Resource Fair* sponsored by the Graduate School
 - _____ Pick up free Madison Metro bus pass at the Union South.

 - _____ Take Radiation Dosimetry Training. Check <http://www.ehs.wisc.edu/radsafety.htm> for info.
 - _____ **Students should check with their Advisor to see if they are required to get a badge.**
 - _____ Talk to second-year students to learn about the program, faculty, courses, and more.
 - _____ Inform the Medical Physics Office of any changes (e.g., address, phone, advisor, funding, etc.)
 - _____ Pick up your mail and check your email regularly!
 - _____ Draft a resume
 - _____ Complete your Individual Development Plan (IDP) as soon as it is requested electronically.
- Affecting some new students:
- _____ International Students – check in with International Students and Scholars Services
Visit their web site at: <http://www.iss.wisc.edu/>
 - _____ Vilas Fellow Recipients – pick up your Welcome Week Checks in Room 217 Bascom Hall
 - _____ Financial Aid (NOT Assistantship Awards) is automatically applied to your tuition and fees. Any remaining amount will be sent to you in the form of a check to your mailing address. Contact the Bursar's Office with any questions.
 - _____ If you have a need related to a disability, contact the McBurney Center before you arrive on campus for program access services, information and referrals.
<http://www.mcburney.wisc.edu>.
 - _____ Submit Final Transcripts to the Graduate School Admissions Office by third week of classes. *Failure to do so will result in a hold placed on future registration.*
 - _____ ESLAT (English as a Second Language Assessment Test) test takers must bring their student identification number and a form of photo ID (i.e. passport, US student identification). See <http://www.english.wisc.edu/esl/> or call 263-3780 for schedule information. There are multiple opportunities available to take this test.

_____ Welcome to Medical Physics!!

Help Us Improve This Handbook

As you use this handbook, please think about what's useful, what's not, and what we've forgotten to include. Please take a minute to tell us what you would like to see in it in the future. The handbook is intended to answer most of your questions about the Department of Medical Physics, but to make that work we need your input. Comments and suggestions should be given to the Graduate Program Coordinator.

Getting Started in Medical Physics at Wisconsin

The preceding page of this handbook contains a list of procedures to follow to get started in the department. Start by checking in with Medical Physics Departmental Office, Room 1005 WIMR. Be sure you complete any necessary paperwork, such as applications for health insurance, if applicable.

1. Enroll for classes. When you were admitted into the program, the Graduate School informed you that you are eligible to enroll on or after a specific date. In addition, you were provided a unique campus ID number as well as a link to the registration page. Registration for classes is done on-line. You will need your campus ID number to register.
2. Once you are enrolled and you arrive on campus, you can get your picture student ID card, or WISCARD. This is issued at UW Union South. You will need your ID number as well as a photo ID, such as your passport, your driver's license, or some other official government issued ID.
3. Activate your free student e-mail at <http://www.mynetid.wisc.edu/activate>. Click on the ACTIVATE NETID button from the My UW Madison login screen. Enter your 10-digit student ID number and birth date. The NetID you create and password you enter are keys to your access to the My UW portal, so make a record of it and keep it private.
4. Verify your mailing address on **My UW** at: <http://my.wisc.edu>
5. Pay your tuition/fees at the Bursar's Office (*watch deadlines because they charge fines for overdue payments*)
6. Pick up a free Madison Metro bus pass at the Union South
7. **Check with your Advisor to see if you need to take Radiation Dosimetry Training.** This is required to get a radiation film badge, which must be worn in many areas. See <http://www.fpm.wisc.edu/safety/radiation/rad.htm>.
8. Take HIPAA training (see Mandatory HIPAA training below.)

Desks, Cubicles

The Medical Physics Department attempts to locate all students in study and work areas in close proximity to their advisor. For the majority of students, this means the student will have space either in a study carrel or a cubicle in the L1 or B1 module of Tower 1 of WIMR. Other areas that may be closer to the student's work area and to their advisors include L7 of WIMR-1 (Drs. Jeraj and Cai), CSC L5 (Drs. Bednarz and Thomadsen), the Radiation Oncology department and labs (Drs. Bayouth, and Paliwal), L2 of WIMR-2 (Dr. Fain) and the Waisman Center (Drs. Alexander and Christian).

To get a desk, the student's advisor makes the request as part of the HR portal New Hire submission process at <https://www.medphysics.wisc.edu/intranet/>. The Medical Physics office coordinates the space requests for Medical Physics graduate students and post-doctoral fellows. Not all students can be accommodated at this time because of the large number of trainees currently working with Medical Physics faculty. However, the administrative staffs of Medical Physics and Radiology do their best to accommodate all requests as soon as possible.

Computers

The department and the university support extensive computational resources for communication, e-mail, word processing, scientific computing, image processing, and presentations. The department's goal is for each student to have access to a desktop computer.

Computers generally are provided through the student's research group, working in partnership with the Medical Physics Department. Once a computer is made available, the Medical Physics Department IT personnel works with students to set up the system, explain policies and

procedures, and install software and updates when appropriate.

Students should consult with their advisor on acquiring a desktop computer. In some situations, it may not be possible to provide each student with his/her own desktop system. A limited number of shared computers are available in shared office space. Yacouba Traore can help you to set up an account on these systems.

Since moving into WIMR in 2008, we experienced 3 flooding situations, one resulting in serious damage to computational resources. Please avoid putting computers and other electronic gear on the floor as such placement previously resulted in loss of data and costly repairs.

Laptop computers, tablets, and other wireless devices can be used throughout WIMR. Access to the wireless portal is automatic with most wireless devices. Wireless access can be obtained using UWNNet or eduroam SSIDs with an agreement that you will abide by the IT policies and procedures of the School of Medicine and Public Health and the University. Configuring your device to use the eduroam SSID will allow you to connect to eduroam SSIDs on other academic campuses using your UW-Madison credentials. The Medical Physics Department rules and regulations are found at: <https://www.medphysics.wisc.edu/intranet/it/>.

HIPAA Training (Mandatory)

The HIPAA (Health Insurance Portability and Accountability Act) Privacy Rule is a federal law designed to help protect the privacy of patient health information. As an employee or student of Medical Physics, which is a unit included within the University's Health Care Component, you must be familiar with the basic principles of the Privacy Rule. Therefore, you **must** complete annual HIPAA training modules and document your completion to the Assistant to the Chair, JoAnn Kronberg. Failure to do so will prohibit you from being a member of the department or working with one of the Medical Physics, Engineering, Radiology, or Human Oncology research groups.

1. Go to <https://hipaa.wisc.edu/hipaa-training.htm>
2. Create a login and password
3. In Learn@UW, find course "2016-2017 HIPAA Privacy & Security Training"
4. For initial training, choose the "HIPAA Privacy at UW" module. If you will be working on a research project that uses Protected Health Information (PHI), you will ultimately be required to complete the "HIPAA Privacy and Research" at UW module (see below). There is no harm in completing this module initially.
5. Complete the course and obtain the certification. Send the certification to the HIPAA security coordinator in the department, JoAnn Kronberg (jmkronberg@wisc.edu).

Advanced HIPAA Training

Many trainees require access to private patient information. Any student working on projects that involve human subjects and Private Health Information (PHI) must complete more advanced modules in this series. For example, if you use computers to view patient images, or if you will be involved in any patient research, this must be so indicated when you do the HIPAA training OR you may have to complete the more advanced training at a later date. A list of individuals who have received the training is maintained by the Institutional Review Board (IRB), and everyone listed as an investigator on a human subject protocol must have completed this training.

Semester Registration Procedures for all: Web Enrollment

Students must register for classes prior to the Fall and Spring semesters and prior to the summer session. Information and detailed instructions may be found at the Registrar's

Homepage: <http://www.registrar.wisc.edu>.

1. Review your Enrollment Invitation. For most first year students this was mailed by the Graduate School after you were accepted into the program. (Note: It usually is not mailed to international addresses.) For continuing students, this invitation is mailed.
2. Meet with your Advisor and discuss course options. As a guide for your course registration, see pages 18-19 for a typical Medical Physics Master's program.
3. Login to My UW Madison <http://my.wisc.edu>
4. Go to the Student Center
5. Follow the options on the top left corner. Courses will be added to your Shopping Cart. Make sure at the end that you do actually enroll into those courses.
6. Pay Tuition by the deadline to avoid the \$100 Late Payment Fee. Once you Register for a course(s), you have made a Commitment to Pay.

Please pay attention to the registration and fee deadlines throughout your graduate studies.

If you attempt to register late, not only will you have to pay a late fee, you will need to request permission from the Graduate School Dean, you will have to fill out a Course Change Form, and you must obtain Departmental permission to register. The Department Chair will not request a waiver on your behalf without a letter from you, explaining why you were late in registering, and from your advisor, providing specific support for your request for late registration. Multiple requests for such waivers will not be granted.

For general enrollment information and assistance with web enrollment, call the Registrar's Office Enrollment Helpline at (608) 262-0920, Monday through Friday, 7:45 a.m. to 4:20 p.m.

Late Registration Appeal Process

Under extenuating circumstances, the Graduate School Dean may consider an appeal to the late fee requirement. The appeal requires the following:

- 1) Letter from advisor on department letterhead stating why the student didn't register by the two week deadline and why the student needs to be registered
- 2) Letter from chairman on department letterhead stating why the student didn't register by the two week deadline and why the student needs to be registered
- 3) Completed Course Change Form (list as add)

The above items are sent to the Dean of the Graduate School.

Late Payment Fees

It is important to pay your tuition and fees, whether enrolled in one or multiple sessions, by the due-date on your Student Account Invoice. A \$100 fee is assessed for payment made after the due date shown on your invoice, and other serious consequences may also result for summer and future terms. Questions should be directed to the Student Accounts Section, Bursar's Office, at (608) 262-2367.

Late-payment fees may be appealed to the Bursar's Student Accounts Section. Documentation must clearly demonstrate that you were not at fault for failure to meet the fee deadline. Waivers of late fees are not granted if it is deemed the student could have met the fee deadline.

A Grade of Incomplete

An instructor may, at his/her option, assign the temporary grade of "Incomplete" to a student who fails to complete the work in a particular course. Each "Incomplete" must be replaced by a permanent grade by the end of the next semester. The course instructor will assign a permanent grade on the basis of what the student has accomplished in the course by that time. To remove an incomplete, the student must finish and turn in the coursework to his/her professor. The student should then request a grade change from his/her professor, who can enter the grade change online.

Pass-Fail Privilege

You may take a course pass/fail if it is not used to meet general degree or major course requirements. (However, the biological sciences degree requirement can be satisfied with a pass/fail grade of “pass.” See Biological Science: Physiology/ Anatomy, below.) Generally, the instructor is not aware the course is being taken as pass/fail, and a grade of A, AB, B, BC, or C is reported as **P**; D or F is reported as **F**. Other courses, designated as credit/no credit, are offered for credit (**Cr**) or no credit (**N**); these courses are labeled in the Timetable. No grade points are assigned for courses taken pass/fail or credit/no credit; these credits are not averaged into your GPA. For information, call the Registrar's Office, (608) 262-3811. None of the courses included in your Ph.D. minor may be taken Pass-Fail.

Individual Development Plan (IDP)

The UW-Madison Graduate School has implemented a required Individual Development Plan (IDP) process for all graduate students. An IDP has to be generated during the first Fall semester of enrollment and must be updated annually by every graduate student. This IDP process is meant to be advantageous to you, the student, as it allows you to perform a detailed self-assessment and use the information from that assessment to establish specific goals to be achieved while in the program. For those who have not completed an IDP, or for those revisiting the process in the Fall semester, more information is available at <http://grad.wisc.edu/pd/idp>. The Graduate School will notify you each fall semester, typically in October/November of each year, to meet with your research advisor and put together/update your IDP. The Medical Physics Program has implemented an online IDP submission process using the Education & Training portal on the Department of Medical Physics website. It can be found at <https://www.medphysics.wisc.edu/intranet/student/>. The required IDP information, along with an online additional component requesting information required for reporting to the SMPH, UW-Madison campus, and our accreditation body (CAMPEP), is updated by the student each year.

Pre-Dissertator Mentoring Committee

A Pre-Dissertator Mentoring Committee to discuss and provide feedback on the Individual Development Plan (IDP) for every Medical Physics Graduate Program student will be constituted by the student in the second (spring) semester after matriculation into the program. The student will form this 3-member committee, comprised of two primary medical physics faculty members along with his/her research mentor, and meet with the committee once a year until the Preliminary Exam is completed successfully and the student becomes a dissertator. The student will present their previously submitted IDP to the committee at each meeting and obtain feedback on his/her goals regarding coursework and career objectives. The two non-advisor Mentoring Committee members may naturally continue as members of the student's Preliminary Exam Committee, but this is not required. After formation of the committee, update the Education Tracker portal, with the committee members and meeting dates.

Leave of Absence

In some circumstances, it may be necessary for a student to temporarily leave the university for personal or other reasons. The following information is from the [Graduate School Academic Policies and Procedures](#). Students should notify their programs as well as the Graduate School Office of Admissions and Academic Services (gsacserv@grad.wisc.edu) of their intention to take a leave of absence. If students have pre-enrolled for a future term and plan to take a leave of absence, they must be sure to drop all courses before the first day of class. Previously enrolled students who wish to return to Graduate School should follow the instructions on the Graduate School Admissions [webpage](#).

Department Requirements for the Master of Science Degree

Core Curriculum

All students in the Medical Physics Program shall take the following core courses (totaling 26 credits) prior to advancing to dissertator status unless they 'opt out': MP501 (3), MP563 (3), MP567 (4), MP573 (3), MP566 (4), MP575* (2), MP568* (2), MP569 (4), MP701 (1). Along with the "Core" courses totaling 26 credits, the additional 5-7 required credits include Journal Club (MP900, taken for credit twice and pass/fail twice), Kinesiology 337 (formerly Anatomy 328) for 3 credits or Physiology for 5 credits (or alternative). This is a total of 30-32 credits for the M.S. Degree. Students should also complete a graduate course in statistics, namely, Statistics 541, 571, or equivalent.

Suggested Coursework for Health Physics

For the M.S. Degree with a Health Physics emphasis, the same 26 credits of core courses are required: MP501 (3), MP563 (3), MP567 (4), MP573 (3), MP566 (4), MP575 (2), MP568 (2), MP569 (4), MP701 (1), plus an independent reading course on Health Physics Rules and Regulations for 1 credit. Nuclear Engineering 427 and 571 must also be taken. In addition, 5-7 elective credits are required. Kinesiology 337 (formerly Anatomy 328) for 3 credits or Physiology for 5 credits (or alternative) is required as one of the electives. This is a total of 37-39 credits for the M.S. Degree. Students should also complete a graduate course in statistics, namely, Statistics 541, 571, or equivalent.

Biological Science: Physiology/Anatomy Requirement

Human Physiology (Physiology 335 or equivalent) or Human Anatomy (Kinesiology 337 (formerly Anatomy 328) or equivalent) is required for all options. It is also possible to apply Neuroscience 524 or other anatomy or physiology courses to satisfy this requirement, but this choice may impact the granting of a CAMPEP certificate (pages 6-7), so consultation with the Department Chair / Program Director or Graduate Committee Chair is advised if obtaining the certificate is of specific interest.

The course may be taken on a pass/fail basis if the student wishes. (A pass/fail grade is not used in computing the GPA, and the student must receive a pass grade to fulfill this requirement.) **Note, however that a pass/fail course does not count for major or minor credit.** The physiology or anatomy requirement may be waived if an equivalent course has been taken for credit in a prior program. The procedure for waiver is for the student to present evidence of having taken an equivalent course to the current instructor of Kinesiology 337 (formerly Anatomy 328) or Physiology 335. If the instructor is satisfied that the student has passed an equivalent course, he/she will write a letter to the chair of the Graduate Committee / Graduate Program Coordinator in Medical Physics summarizing this assessment.

Courses for Training Grant-Supported Students

Students selected as Training Grant trainees may be required to take additional courses in the biological sciences and research methods. Each training grant program has specific requirements, so current and prospective training grant trainees should consult with the Training Grant coordinator of the specific program for details. The Medical Physics Department administers the UW Radiological Sciences Training Grant. Students may be nominated by their advisors for one of the 8 pre-doctoral positions on this grant whenever there is an opening. These positions are most often filled by pre-docs who have attained dissertator status and are in their final years of Ph.D. training.

* At this time, these two courses are part of a 3-credit course MP578. They will be separated into two 2-credit courses in the near future.

Ethics and Responsible Conduct of Research

All M.S. and Ph.D. degree students must complete the 1-credit, Medical Physics course (MP 701 *Ethics and the Responsible Conduct of Research and Practice of Medical Physics*) in their second semester. It is imperative that students understand that **course attendance is mandatory, and only a single excused absence is permitted for this course**. Students who fail to follow these requirements will be required to drop the course and retake it at a future date; this can delay progress toward degree completion.

Other Requirements

Seminar Attendance: All graduate students are expected to regularly attend the weekly Medical Physics 900 Seminar every semester to broaden their understanding of all aspects of Medical Physics. This is a required course, which must be taken for graded credit for two semesters and for pass/fail credit for two additional semesters before receiving the M.S. degree.

Working with Animals: Students and personnel working with animals must complete the Research Animal Resource Center (RARC): Animal User Online Certification training available through the same UW-RSP site. In order to be eligible to be listed on a RARC protocol, certified completion of this course is necessary.

Working with Human Subjects: UW-Madison requires that all personnel engaged in human subject research and listed on an Institutional Review Board (IRB) protocol submitted to a UW-Madison IRB complete Human Subjects Protection training before approval of the protocol.

PHI (Private Health Information) and HIPAA: See HIPAA section above.

Statistics Courses: Students interested in following the path to ABR Board Certification must keep in mind that AAPM Report 197 recommends a course in statistical procedures in the training program. Students should complete a graduate course in statistics, namely, Statistics 541, 571, or equivalent.

Student and Exchange Visitor Information System (SEVIS)

SEVIS is an internet-based, electronic data collection system that allows schools and the U.S. Department of Homeland Security (DHS) to exchange data on the visa status of international students. The UW-Madison must report:

- Whether the student has enrolled at the school, or failed to enroll.
- A change of the student's or dependent's legal name or address.
- Any student who graduates prior to the end date listed on the I-20.
- Academic or disciplinary actions taken due to criminal conviction.
- Whether the student drops below a full course of study without prior authorization from the DSO (Immigration regulations refer to international student advisers as "designated school officials" - DSOs).
- Termination date of academic program and reason for termination.
- Other data generated by standard procedures such as program extensions, school transfers, changes in level of study, employment authorizations, and reinstatement.
- Any student who fails to maintain status or complete his or her program.

Some examples of actions due to failure to maintain status include dropping from full-time to part-time enrollment without prior approval from the DSO, attending a school other than the one a student is authorized to attend, failure to apply for a timely transfer or I-20 extension or change in level of study, unauthorized employment, and failure to report a change of address.

Student records are updated in SEVIS every semester. Students who fail to maintain status will lose the privileges of their student visa and become subject to deportation. Specific consequences are severe and may include denial of reentry to the U.S., inability to move from

undergraduate to graduate status, denial of requests for practical training, denial of requests to change visa status, and possible denial of all future visa applications.

For more information on SEVIS regulations contact International Student Services (ISS), 217 Armory and Gymnasium (Red Gym), 716 Langdon Street, 262-2044, iss@odos.wisc.edu, <http://iss.wisc.edu>; or visit DHS Office of Immigration and Customs Enforcement at <http://www.ice.gov/sevis>.

Other Specifics about the M.S.

Either a **Written Thesis** or **Successful Completion of the Oral Ph.D. Qualifying Exam** is required for students exiting the program with a **terminal M.S. degree**. A thesis must be successfully defended by the student to three or more faculty (inclusive of the student's advisor). With the approval of the Graduate Committee, a thesis may be substituted for six elective credits. Doctoral students who have successfully completed the Oral Ph.D. Qualifying Exam can apply for a M.S. degree in Medical Physics without completing a thesis. However, all other M.S. degree requirements are unchanged.

A 3.0 (B) grade-point average must be achieved for the total program of graduate courses taken, not including research credits (Medical Physics 990). Pages 18-19, provide typical course sequences for the M.S. degree, beginning with the Fall Semester.

Residence Credit Reduction

For the M.S. Degree in Medical Physics, residence credit requirements may be reduced by a maximum of 3 credits for a student with prior graduate level coursework from other institutions. For each such course, the student, after obtaining advisor approval, must establish that the graduate course taken previously is equivalent to a similar course taught at UW-Madison. A minimum grade of B is required for the prior graduate level course. A letter from the UW-Madison instructor of the course, confirming equivalency or the need for any specific action(s) before equivalency is granted, is required.

For the M.S. Degree in Medical Physics, residence credit requirements may be reduced by a maximum of 7 credits for excess (above and beyond undergraduate graduation requirements) graduate coursework in Medical Physics taken by a student during his/her undergraduate education at UW-Madison. With the approval of the Advisor, a student with a minimum grade of B in the Medical Physics graduate level coursework can apply for this residence credit reduction.

Residence credit will be granted at the discretion of the Medical Physics Graduate Committee. This coursework will not appear on the Graduate Career portion of the UW-Madison transcript nor count towards the Graduate Career GPA. No other considerations for waiver of course requirements will be allowed for students who receive Residence Credit reduction.

Typical Course Sequence for Master of Science Degree in Medical Physics

1st Semester -- (Fall)

- †§ Med. Phys. 501 -- Radiological Physics and Dosimetry -- (3 cr.)
- †§ Med. Phys. 563 -- Radioisotopes in Medicine and Biology -- (3 cr.)
- †§ Med. Phys. 567 -- The Physics of Diagnostic Radiology -- (4 cr.)
- †§ Med. Phys. 573 -- Medical Image Science: Mathematical and Conceptual Basis -- (3 cr.)
- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr.)

2nd Semester -- (Spring)

- †§ Med. Phys. 566 -- Physics of Radiotherapy -- (4 cr.)
- †§ Med. Phys. 569 -- Health Physics & Biological Effects-- (4 cr.)
- †§ Med. Phys. 575* -- Diagnostic Ultrasound Physics-- (2 cr.)
- †§ Med. Phys. 568* -- Magnetic Resonance Imaging (MRI) -- (2 cr.)
- †§ Med. Phys. 701 -- Ethics, Responsible Conduct of Research and Practice of Medical Physics -- (1 cr.)
- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr.)

3rd Semester -- (Fall)

- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr. P/F)
- *Electives: Choose from:
 - Med. Phys. 572 -- Advanced Radiation Treatment Planning -- (3 cr.)
 - Statistics 541, 571 or equivalent -- (3-4 cr.)
 - § Biological Science (e.g., Physiology 335, Kinesiology 337 (formerly Anatomy 328), 637)
 - Med. Phys. 571 -- Advanced External Beam Radiotherapy -- (3 cr.)
 - Med. Phys. 577 -- Principles of X-ray Computed Tomography -- (3 cr.)
 - Med. Phys. 679 -- Radiation Physics Metrology -- (3 cr.)
 - Med. Phys. 547 -- Biomedical Optics -- (3)
 - Med. Phys. 710 -- Advances in Medical Magnetic Resonance -- (2 cr.)
 - Physics 623 -- Electronic Aids to Measurement -- (4 cr.)
 - Med. Phys. 900 -- Journal Club and Seminar

4th Semester -- (Spring)

- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr. P/F)
- *Electives: Choose from:
 - Med Phys 410** -- Radiobiology -- (2 cr.)
 - Med. Phys. 530 -- Medical Imaging Systems -- (3 cr.)
 - Med. Phys. 570*** -- Advanced Brachytherapy Physics -- (3 cr.)
 - Med. Phys. 574 -- Medical Image Science: Applications -- (3 cr.)
 - Biological Science (e.g., Oncology 401, Neuroscience 524, Physiology 335)
 - Med. Phys. 900 -- Journal Club and Seminar

Medical Physics Oral Qualifying Exam: See Details on Page 20.

† Required course.

§ Courses required to satisfy the CAMPEP core curriculum.

* Electives are to be approved by faculty advisor. ** Offered every EVEN Spring *** Offered every ODD Spring

Summary: 26 core credits [501, 563, 566, 567, 569, 573, 578, and 701], ≥7 additional required credits [Journal Club twice for credit and twice pass/fail, Anatomy/Physiology (or alternative), statistics, electives], for a total of 30-32 credits for the M.S. Degree.

Please note: Trainees on the Radiological Sciences Training Grant must take Oncology 401 or 703. All students must take Research Ethics MP 701, as outlined on page 15.

* Note: These two 2-credit courses are currently components of a 3-credit course, MP578. They will be separated into two courses in the near future.

Course Sequence for Master of Science Degree in Medical Physics (Health Physics)

1st Semester -- (Fall)

- †§ Med. Phys. 501 -- Radiological Physics and Dosimetry -- (3 cr.)
- †§ Med. Phys. 563 -- Radioisotopes in Medicine and Biology -- (3 cr.)
- †§ Med. Phys. 567 -- The Physics of Diagnostic Radiology -- (4 cr.)
- †§ Med. Phys. 573 -- Medical Image Science: Mathematical and Conceptual Basis -- (3 cr.)
- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr.)

2nd Semester -- (Spring)

- †§ Med. Phys. 566 -- Physics of Radiotherapy -- (4 cr.)
- †§ Med. Phys. 569 -- Health Physics & Biological Effects-- (4 cr.)
- †§ Med. Phys. 575* -- Diagnostic Ultrasound Physics-- (2 cr.)
- †§ Med. Phys. 568* -- Magnetic Resonance Imaging (MRI) -- (2 cr.)
- †§ Med. Phys. 701 -- Ethics, Responsible Conduct of Research and Practice of Medical Physics -- (1 cr.)
- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr.)

3rd Semester -- (Fall)

- Nucl. Eng. 305 -- Fundamentals of Nuclear Engineering -- (3 cr.)
- † Nucl. Eng. 427 -- Nuclear Instrumentation Lab -- (2 cr.)
- † Med. Phys. 661, 662, or 665 -- Lab in Radiological Physics -- (1 cr.) (661 is 2 cr.)
- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr. P/F)
- *Electives -- (3 cr.)
 - Med. Phys. 572 -- Advanced Radiation Treatment Planning -- (3 cr.)
 - Statistics 541, 571 or equivalent -- Statistics -- (3-4 cr.)
 - § Biological Science (e.g., Kinesiology 337 (formerly Anatomy 328), Physiology 335)

4th Semester -- (Spring)

- † Med. Phys. 699 -- H.P. Rules and Regulations -- (1 cr.)
- † Nucl. Eng. 571 -- Economic and Environmental Aspects of Nuclear Energy -- (3 cr.)
- † Med. Phys. 663 -- Lab in Radiological Physics -- (1 cr.)
- † Med. Phys. 900 -- Journal Club and Seminar -- (1 cr. P/F)
- *Electives -- (4 cr.)
 - Med. Phys. 410** -- Radiobiology -- (2 cr.)
 - Med. Phys. 570*** -- Advanced Brachytherapy Physics -- (3 cr.)
 - Med. Phys. 574 -- Medical Image Science: Applications -- (3 cr.)
 - Biological Science (e.g., Oncology 401, Physiology 335, Neuroscience 524)

Medical Physics Oral Qualifying Exam: See Details on Page 20.

† Required course.

§ Course required to satisfy CAMPEP core curriculum.

* Electives are approved by faculty advisor.

** Offered every other Spring (even years)

Summary: 26 core credits, ≥9 additional required credits [NE427, NE571, Journal Club twice for credit and twice pass/fail, Anatomy/Physiology (or alternative)], Statistics for a total of 38-40 credits for the M.S. Degree.

Please note: Trainees on the Radiological Sciences Training Grant must take Oncology 401 or 703. All students must take Research Ethics MP 701, as outlined on page 15.

** Note: These two 2-credit courses are currently components of a 3-credit course, MP578. They will be separated into two courses in the near future.

Qualifying Examination

An Oral Ph.D. Qualifying Exam is required for students pursuing a Ph.D. Degree. The Oral Exam will test the student on core and advanced topics, and will be administered at the end of the second year of enrollment (or when the number of credit hours required for a M.S. degree has been completed). The questions asked during the exam will require the integration of knowledge gained during completion of the curriculum taken by the student during his/her first two years. The exam will be administered by a five-member Oral Exam Committee. A student's advisor cannot be a member of his/her Oral Exam Committee.

For students who are taking the core curriculum, or have obtained waiver(s) for core curriculum course(s), all members of the Oral Exam Committee will be members of the Medical Physics Oral Doctoral Qualifying Exam Panel, which will have at least nine members who serve 3-year staggered terms. The Graduate Committee Chair will select six members from the panel for each Oral Exam Committee, with one named as an alternate in case an appointed member is not available at the time of the exam due to unanticipated circumstances.

For students who 'opt-out' of the core curriculum, three members of the Oral Exam Committee will be members of the Medical Physics Oral Doctoral Qualifying Exam Panel, and the remaining three members will be selected from a list of faculty members provided by the student and his/her faculty advisor. The student must justify the inclusion of suggested members and also ensure that each proposed member agrees to serve on the Oral Exam Committee, if appointed. The Graduate Committee Chair will appoint the six member Oral Exam Committee members and alternates.

Students will be graded on the following criteria for the oral qualifying examination.

- Understanding of fundamental medical physics concepts
- Integration of knowledge across core and advanced courses
- Critical thinking / reasoning skills
- Professional demeanor

Grading for the Oral Ph.D. Qualifying Exam will be performed on a 5-point scale listed below in order to provide feedback to the student.

- 1- Does not meet expectations (substantial deficiencies)
- 2- Below expectations (some deficiencies)
- 3- Meets expectations
- 4- Exceeds expectations
- 5- Exceptional performance

An average score of '3' from each committee member and across each category is needed to obtain a pass. Scores will be entered by each committee member immediately following the examination on the Education & Training portal. A score of '1' or '2' in response to any category requires a brief explanation in an associated text box. The committee will then deliberate to reach a consensus decision. Students will be provided the mean and standard deviations across categories along with consolidated comments and suggestions for improvement, if any, prepared by the committee.

The student must pass the Oral Ph.D. Qualifying Exam in order to subsequently take the Prelim Exam. A decision of Unconditional Pass, Conditional Pass, or Re-Examination will be made by the Oral Exam Committee. Five of the six members must be in agreement with the decision for a Pass. For a Conditional Pass, the condition(s) must be clearly stated and should be completed within six months. If a student is required to be 're-examined' after the Oral Exam on

their first attempt, he/she will be given one more opportunity, six months later, to retake the exam. Following the retake, a decision of Unconditional Pass, Conditional Pass, or Fail will be made by the 6-member panel. Five of the six members must be in agreement with the decision for a Pass. For a Conditional Pass, the condition(s) must be clearly stated and must be completed within six months. A decision of 'Fail' on a second attempt will cause the student to be transferred from the Ph.D. degree program to the terminal M.S. degree program, where he/she will need to complete and defend a written M.S. thesis.

Satisfactory Progress

Students working towards the M.S. degree must meet departmental criteria for satisfactory progress, as detailed on page 32.

Requirements of the Graduate School for the M.S. Degree in Medical Physics

Requirements of the Graduate School must be satisfied in addition to those of the department. Starting in Fall 2014, the minimum Graduate School course credit requirements for a Master's degree is 30 credits of course work. The maximum graduate credits a student can take have been increased from 12 to 15 credits per semester starting Fall 2014. These rules apply to all students starting their program in or after Fall Semester 2014. For updated information please refer to the **Graduate School Academic Guidelines** (formerly the *Graduate Student Handbook*).

Graduation for Master Degree Students

Students must be enrolled during the semester in which they expect to graduate; otherwise they will be required to pay a degree completion fee. After meeting all needed requirements students can request a Master's degree through the Education & Training portal on the Department of Medical Physics website at <https://www.medphysics.wisc.edu/intranet/student/>. The only exception to this would be if the student finishes his/her work within a Graduate School defined Window Period after the semester ends. The degree is awarded at the end of the next semester, but enrollment is not necessary. In order to graduate, students must resolve all grades of incomplete and have a cumulative GPA of at least 3.0. They must also fulfill the Minimum Credit Requirement of the Graduate School. (See: Requirements of the Graduate School for the M.S. in Medical Physics.) Midway through the final semester (November for a Fall Degree, April for a Spring Degree and July for an August Degree), students expecting to graduate should file a **Petition to Graduate**. Petitions and details about filing them can be obtained from the Medical Physics Graduate Program Coordinator, Deb Torgerson. Once the petition is filed, the Graduate School will conduct a degree completion check to ensure that all requirements have been fulfilled. If all conditions have been met, a degree warrant will be issued. The student is responsible for the submission of the required information to be included in the commencement program. Students can obtain further information about the ceremony at UW's "Countdown to Commencement," four to six weeks prior to graduation. **The Commencement Hotline number is 608-262-9076.**

Degree Certification

Degrees are processed at one time after the Fall, Spring, or Summer semester. Due to the volume of degrees awarded, it can take up to four months after the semester has ended to receive a degree certificate. Sometimes students need written verification that they have their degree prior to the time that they actually receive their degree certificate in the mail. Students may request a degree certification letter from the Registrar's Office (website <http://registrar.wisc.edu/>; phone number 608-262-3811). The signed master's warrant must be turned into the Graduate School and processed before the Registrar's Office will supply this letter.

Department Requirements for the Ph.D. Degree

Ph.D. Candidacy

To be considered for candidacy for the Ph.D. degree, a student must pass the qualifying examination and complete all requirements for the M.S. degree in Medical Physics at the University of Wisconsin, or must have received from another institution a degree which is accepted as equivalent by our Graduate Committee. The student must also have demonstrated superior promise for research and be recommended for the Ph.D. program by the research advisor.

Additional Course Requirements

In addition to the course requirements for the M.S. degree outlined above, Ph.D. degree students must take additional courses for a cumulative total of at least 54 graduate credits (greater than and including 300 level) for completion of the Ph.D. These graduate credits can include research and independent study credits, as well as the minor course requirement credits, outlined below.

Students supported by the Radiological Sciences Training Grant must take at least one course in oncology, such as Oncology 401 or 703.

Minor Subject Area

The 54 credits needed to satisfy the Ph.D. degree requirement must include 9 credits of graduate level courses outside the Medical Physics department constituting a minor subject area. The minor should consist of a coherent body of work complementary to the candidate's research. The objective of the minor course requirement is to add a defined breadth to the candidate's education. There are two options for completing the minor:

Option A requires a minimum of 9 credits in a single (non-Medical Physics department) department/major field of study. Selection of this option and the minor course composition requires the approval of the minor department, after approval from the research advisor. This option is attested in the student transcript with the name of the minor granting department.

Option B is a mixed minor and requires a minimum of 9 credits in two or more departments. This option is attested in the student transcript as a 'Distributed Minor'.

- A course cross-listed with Medical Physics will be considered outside the department if its major home is not Medical Physics.
- The minor course composition requires the approval of the Medical Physics Graduate Committee, after approval from the research advisor on the education tracker web-site.

The minor course sequence must be planned by the student with advice from the research advisor before or immediately following the Ph.D. qualifying exam, as it must be approved by the minor department (for option A) or by the major department (for option B) and must be filed/uploaded onto the education tracker web-site with the Department of Medical Physics no later than halfway through the minor course sequence. The minor course plan, documented on education tracker web-site and approved by the student's advisor, the Graduate Committee Chairperson, and the Department Chairperson, must be updated on the education tracker web-site and with the Medical Physics Graduate Program Coordinator before registering for courses in the Fall Semester following the Ph.D. qualifying exam.

Minor course requirements meeting either Option A or following the submitted plan for Option B must be fulfilled before taking the preliminary examination. Candidates are required to achieve

an average GPA of 3.0 for these 9 credits (no pass/fail or audits are allowed). No research or thesis credits can be used. In addition, no more than 5 credits of course work can come from courses completed 5 years prior to admission to the Ph.D. program, and no courses taken 10 years or more prior are allowed.

It is possible to satisfy part of the minor requirement by suitable courses taken elsewhere, if approved by the appropriate department (See Options A or B). These courses must be approved by the Graduate Committee, and their equivalency to a graduate course taught at the University of Wisconsin must be established. In most cases this would be accomplished by presenting the instructor of the equivalent UW-Madison course with the syllabus and textbook title used in the outside course. The graduate student is responsible for initiating the course equivalency request, with advisor approval. The Graduate Committee may also approve a previously earned Master's Degree in science (not in Medical Physics) as satisfying minor requirements without the need to establish course equivalency. All equivalent courses and previously earned Master's degrees must meet the UW Graduate School minimum degree requirements posted at <http://www.grad.wisc.edu/catalog/degreqG.html>. Outside courses will not count towards the 54 graduate course credit requirements for the Ph.D. in Medical Physics or towards the grade point average, except as stated in the Residence Credit Reduction sections (see page 17 or 32).

The minor request can be submitted via the education tracker web-site on the Education & Training portal on the Department of Medical Physics website at <https://www.medphysics.wisc.edu/intranet/student/>. Data to be included online include a) the list of planned courses, and b) a brief narrative provided by the student that describes how the minor program forms a coherent body of work, for evaluation by the Graduate Committee and the student's research committee during the preliminary examination, and c) appropriate approvals.

Minor in Medical Physics

A candidate for the doctorate in another department who wishes to minor in Medical Physics is required to select a minimum of 9 credits. The chair of the Medical Physics Graduate Committee should be consulted for detailed information.

Preliminary Examination

A student who has received a pass on the Oral Ph.D. Qualifying Exam and who wishes to pursue the Ph.D. degree must work with a Medical Physics faculty member/affiliate who is willing to serve as his/her research advisor. Students work with their advisor(s) to discuss possible areas of thesis research and additional course work, including the minor requirement. Most students select a thesis topic before or early in their second year of studies. A thesis proposal or prospectus will then be prepared for presentation to an examining committee in the **Preliminary Examination** before the end of the third year following matriculation. A six-month extension can be requested through the Education tracker if the student is close to completing the examination. Additional extensions may be granted only for unforeseen circumstances, and must be approved by the Graduate Committee Chair and the Department Chair at the request of the student and with the written support of the student's advisor.

The student will be transferred to the terminal Master's program (without thesis requirement) if their Preliminary Examination is not completed by the end of the third year of enrollment. An extension of this deadline can be obtained by the student for unforeseen circumstances such as a change in research laboratory or an authorized leave of absence from the department. This extension has to be requested by the graduate student in writing and approved by the graduate

committee and department chairs.

The purposes of this Preliminary Exam are to do the following:

- (a) determine whether the student has chosen a thesis topic and an approach that are likely to yield a successful dissertation;
- (b) estimate the student's understanding of the proposed research and competence to carry it out;
- (c) test the student's general understanding of the scientific method of research.

Purpose (a) suggests that the student should **not do** a large part of the dissertation research first, and then present it to the preliminary examination committee as a *fait accompli*. In case of failure to pass, the student's time will have been wasted. **To avoid this situation the Preliminary Exam is to be taken as early as practicable in the third year of graduate study.**

The exam consists of two parts for most students; the parts may be distinct (as described below) or may be combined without a break in the exam. The student will be informed of the format before the exam begins. **Part 1** is a 45-minute oral presentation by the student, detailing the research proposal as outlined in the prospectus. This is followed by **Part 2**, which is 45 minutes of questioning about the proposed research. (A **Part 3** of the exam, as described below, will be conducted for students who matriculated before 2015.)

Preliminary Exam Scheduling: Students should select their committee members, apply for their warrant and schedule their Preliminary Exam through the [Education & Training portal](#) on the Department of Medical Physics website. The Preliminary Exam will be conducted by an *ad-hoc committee* of a minimum of 5 members approved for each student by the Chairman of the Graduate Committee for Medical Physics. It is recommended that members of this committee continue as the student's Thesis Committee to maximize the advantages that can be gained from this group. The student's research advisor will ordinarily be a member of the Prelim Exam Committee, but may not chair it.

The graduate student, after consulting with the research advisor, will alert the Graduate Committee Chair to the need for Preliminary Exam committee formation at least **four weeks** before the earliest possible date of the exam through the [Education & Training portal](#) on the Department of Medical Physics website. The Graduate Program Coordinator will be notified after the committee is approved, and after all Preliminary Exam requirements are satisfied as tracked on the education tracker web-site. Please ensure that details on the Minor Option, Date Minor was completed, Prelim Date/Time/Location, Prelim Title and for each Committee Member, their name, Net ID, Title, and Department, are updated on the Education & Training portal before requesting the warrant. The **Preliminary Exam Warrant** will then be requested from the Graduate School by the Graduate Program Coordinator.

The Graduate School requires a Preliminary Exam Warrant to be requested at least three weeks prior to the exam and that all course-work incompletes be resolved before requesting the Preliminary Warrant. The graduate student and research advisor should complete all requirements on the education tracker web-site at least **four weeks** before the earliest possible date of the exam to enable scheduling the exam to everyone's satisfaction.

Preliminary Exam Committee Composition: At least three members of the Preliminary Examination committee should have a non-zero appointment in the Medical Physics

department. The preliminary exam chair will not be the student's advisor, and should be selected from one of the three Medical Physics faculty. Four members of the committee should be tenured or tenure-track faculty. One member may be from the CHS track, or clinician track, or academic staff. One member shall be from outside the student's major department.

All five members must commit to participate at the scheduled exam time. Please note that Preliminary Exams typically take about two hours for the presentation, questions, discussion and deliberations.

A **prospectus** (research proposal) will be prepared by the student. The Prospectus must consist of a maximum of 13 pages of single-spaced text plus figures. Please use at least an 11-point font. References do not count in the 13-page limit. The prospectus should consist of the following parts:

- a. Statement of the Research Problem and Specific Aims (1 page)
- b. Research Strategy (12 pages single spaced)
 - Significance
 - Innovation
 - Approach (for each Aim provide Preliminary Results, when available, and a Research Plan with experimental methodology, expected outcomes and pitfalls)
- c. Expected Timeline for completion
- d. References (not part of the 13-page limit)

The prospectus must be distributed to all committee members at least 2 weeks prior to the scheduled exam date, and an electronic copy of the prospectus should be uploaded using the Education & Training portal. All committee members are designated readers of the prospectus.

Students will be graded on the following criteria for the Preliminary Examination:

Research Proposal

- Organization of the proposal
- Clear description of peer-reviewed literature / prior research
- Clear research objectives / specific aims
- Clear expected outcome(s) and alternative strategies for each specific aim
- Proposal extends previously reported work
- Experimental or model design, statistical analysis and validation
- Quality of written proposal (grammar, spelling, clarity)

Presentation and Examination

- Organization of presented materials
- Clear and concise description of background and objectives / specific aims
- Appropriate use of communication aids and overall quality of the presentation
- Demonstrated understanding of relevant peer-reviewed literature
- Demonstrated understanding of subject matter and concepts
- Demonstrated appropriate critical thinking / reasoning skills
- Demonstrated ability to perform the proposed research

Grading for the Preliminary Examination will be performed on a 5-point scale listed below in order to provide feedback to the student.

1. Does not meet expectations (substantial deficiencies)

2. Below expectations (some deficiencies)
3. Meets expectations
4. Exceeds expectations
5. Exceptional performance

An average score of '3' from each committee member and across each category is needed to obtain a pass. Scores will be entered by each committee member immediately following the examination on the Education & Training portal. A score of '1' or '2' in response to any category requires a brief explanation in an associated text box. The committee will then deliberate to reach a consensus decision. Students will be provided the mean and standard deviations across categories along with consolidated comments and suggestions, if any, for improvement prepared by the committee chair.

The student must pass the Preliminary Exam in order to subsequently become a dissertator. A decision of Unconditional Pass, Conditional Pass, or Re-Examination will be made by the 5-member Prelim Exam Committee. Four of the five members must be in agreement with the decision for a Pass. For a Conditional Pass, the condition(s) must be clearly stated and should be completed within six months. If a student is required to be 're-examined' after the Prelim Exam on their first attempt, he/she will be given one more opportunity, within six months, to retake the exam. Following the retake, a decision of Unconditional Pass, Conditional Pass, or Fail will be made by the 5-member panel. Four of the five members must be in agreement with the decision for a Pass. For a Conditional Pass, the condition(s) must be clearly stated and must be completed within six months. A decision of 'Fail' on a second attempt will cause the student to be transferred from the Ph.D. degree program to the terminal M.S. degree program.

Upon successful completion of all parts of the Preliminary Exam, the student's warrant will be signed by the committee. In the case of a Conditional Pass, the prelim warrant will not be signed by the research advisor or submitted to the graduate school until all conditions are met. The exam must be passed completely by the end of the third year (fourth year if the exam has to be repeated).

Summary of Procedure for Completing the Preliminary Exam

1. Work closely with an advisor to define a research topic.
2. Complete all course requirements, including the 1-credit Medical Physics ethics course (MP701)
3. Write a research prospectus in a grant application format.
4. At least four weeks before the prelim exam, present a proposed five member prelim committee and chair to the Graduate Committee Chair for approval.
5. Be sure there are no Incompletes (or "NR" entries) on the academic record.
6. Four weeks before the Prelim Exam, update the Education & Training portal with the information required to secure a Prelim Warrant. The Prelim Warrant Request needs to be requested from the Graduate School at least three weeks prior to the exam.

The following conditions must be met before the request for the warrant can be made. Students are advised to begin addressing them at least four (or more) weeks before the expected preliminary exam date.

- a) The set of courses completed, or currently in progress, for the minor must be approved on the Education Tracker web-site by the appropriate department official(s). If the minor is to be in a single department other than Medical Physics (Option A), then that department must issue the written approval, and a copy of the approval form given to

the Medical Physics Graduate Program Coordinator and uploaded to the education tracker web-site. If the distributed minor is chosen (Option B), then the appropriate courses have to be selected on the education tracker web-site. The minor request must be approved and signed by the Medical Physics Department Chair, Graduate Committee Chair and the student's research advisor on the education tracker web-site, before scheduling the Ph.D. Preliminary Examination.

- b) The student must have no course grades of "incomplete" (or "NR") on his/her record.
 - c) The 1-credit ethics course requirement (MP701) must be completed.
7. At least two weeks before the preliminary exam, deliver the prospectus to the Prelim Committee. The student needs to send the Graduate Program Coordinator an electronic copy of their prospectus.
 8. The day of the preliminary exam, take the prelim warrant to the exam; after passing the exam, have it signed by all examining committee members. The candidate will upload an electronic version with all signatures to the Education & Training portal and also email the electronic version to the Graduate Program Coordinator before submitting the original warrant to the Graduate School.

Responsibilities of Chair Person and Faculty on the Ph.D. Prelim Committee

1. The prospectus has to be distributed at least 14 days before preliminary examination so that there is adequate time to thoroughly read it.
2. The Research Advisor designates a primary Faculty from the Medical Physics department as the Chair of the Preliminary Examination committee
3. Oral exam for the research proposal. This component for most students consists of two parts.
 - a. **Part 1** is a 45-minute presentation, giving an overview of significance of proposed research, Specific Aims and Preliminary Results.
 - b. **Part 2** is a question and answer session of 45 minute(s). The committee is to probe more deeply into the salient points of the proposed research to be conducted by the candidate.
 - c. For students who matriculated before 2015, the committee will conduct **Part 3** of the examination, which may consist of up to one hour of questions to further probe the candidate's knowledge of general Medical Physics principles, but not necessarily on the proposal itself. Graduate students who have to take Part 3 should schedule an additional hour for their Preliminary Examination.
4. The Preliminary Exam committee chairperson must notify the graduate student, committee members, Graduate Program Coordinator, Graduate Committee Chair, and Department Chair of the outcome of the Preliminary Exam via the Education & Training portal. In the case of a conditional pass, the prelim warrant **must** not be signed by the research advisor or submitted to the graduate school until all conditions are met. The Preliminary Exam committee chair or advisor must notify the graduate student, committee members, Graduate Program Coordinator, Graduate Committee Chair, and Department Chair using the Education & Training portal when these conditions are met. The signed prelim warrant is then submitted to the Graduate School.
5. The Preliminary Exam committee will meet regularly to discuss research progress for a student with a conditional pass until the student is admitted to dissertator status.

Dissertator Status

When a student has completed all required courses for the Ph.D., completed courses in a minor area, and has passed the Preliminary Examination, he/she becomes a dissertator. As such, the student should only register for a total of 3 graded graduate level credits per semester. The 3

credits are usually in Medical Physics 990 (Research), but can include 1-3 credits of formal course work and/or Rad Labs related to the student's research, if approved by his/her advisor. This level of registration must be maintained continuously for spring and fall semesters (and for the summer 8-week session as well) until the dissertation is completed and filed in the U.W. Memorial Library. **Failure to maintain such continuous registration will result in a penalty equal to the registration fee of 12 credits at the time the dissertation is filed.**

Note: A dissertator is required to register for 3 credits per semester to qualify for an RA appointment. Audit and Pass/Fail courses are not allowed.

Dissertator status must be achieved by the appropriate deadline, generally before the first day of classes in a given semester, in order to qualify for the 3-credit requirement in that semester.

Annual meeting(s) with Dissertation committee:

Each dissertator must schedule annual meetings with his/her dissertation committee to present a progress report on his/her research activities. The committee will evaluate research progress and provide feedback on research direction. The committee chair (Preliminary Exam committee chair) will provide a brief summary of the deliberations and upload this to the Education & Training portal on the Department of Medical Physics website.

Seminar Requirement

The student is expected to deliver a 30-minute seminar on their doctoral dissertation research before graduation. This seminar will consist of at least a 20-minute oral presentation with the remainder of time scheduled for questions. It is NOT meant to be a repeat or a preview of the dissertation defense presentation. At a minimum, there should be at least 5 minutes left for questions. The seminar will consist of the following parts:

- Background for general understanding. This should be a general review of the given area of study.
- Problem the student is seeking to solve. Why was this a problem in the area of study?
- Method(s) utilized to solve the problem
- Results & Conclusions

A general guideline would be to allot 5 minutes for each of the above sections.

Graduate Faculty Executive Committee Doctoral Dissertation Policy

The Graduate Faculty Executive Committee (GFEC), the governance body responsible for graduate education policy at UW-Madison, has the following minimum requirements for doctoral dissertation committee membership and collaboration as outlined on their web-page <https://grad.wisc.edu/gfec/dissertation2017/>. The Medical Physics program at UW-Madison employs more rigorous requirements, which are outlined in detail below.

Dissertation and Thesis Defense

Upon completion of the research, the student is required to write a satisfactory dissertation reporting the results. An oral examination on the contents of the thesis will be done by a faculty committee representing the Medical Physics Department. This "thesis defense" may not be taken until all other requirements for the degree have been satisfied, the student's record is clear of incomplete grades, and at least 1 year has passed since taking the Preliminary Exam. The defense must be completed within 5 years after passing the Preliminary Exam.

Writing research reports and authoring or co-authoring research publications is a critical part of Ph.D. training. All doctoral students are **required** to have *at least* one first-author, peer-reviewed journal publication or a submitted manuscript under peer-review in their area of research prior to their dissertation defense.

Doctoral Dissertation

Details on the formatting (thesis style) and other UW-Madison graduate school requirements for doctoral dissertation are available at: <https://grad.wisc.edu/currentstudents/doctoralguide>. A doctoral dissertation should at a minimum contain the following components.

- Abstract
- Introduction, Problem Statement, Dissertation Outline
- A comprehensive Literature Review, and statement of how the dissertator's research contributed new knowledge to the field.
- Around 3-4 chapters describing the original research performed to address the problem statement. Typically, each of these chapters should be publishable as a peer-reviewed journal paper.
- A Conclusion or Summary Chapter describing the new/novel contributions of the dissertation.
- Possible future work in this research area.
- Bibliography

Currently, the Graduate School allows departments to choose their own reference style. Many students follow the NIH grant format for references, and an example is shown below. It works well to use single-spaces within an entry and double spaces between entries.

1. Chen H, Varghese T, Rahko PS, and Zagzebski JA, Ultrasound Frame Rate Requirements for Cardiac Elastography: Experimental and in-vivo Results, *Ultrasonics*, 2009; 49 (1), 98-111.

The Graduate School, however, does have final say on the dissertation style and the student has to follow those directions.

Thesis Defense: The candidate will present his/her dissertation work to an Oral Defense Committee consisting of five or more members of the graduate faculty, with the research advisor serving as chairperson. The members of the Oral Defense Committee are selected by the candidate's advisor and the Chair of the Graduate Committee. This committee must be approved by the by the Dean of the Graduate School.

Composition of the Thesis Committee

Thesis Committees (sometimes called "Graduate Advisory Committees" or "Degree Committees") advise and evaluate satisfactory progress, administer preliminary and final oral examinations, evaluate a thesis or dissertation, and/or sign a degree warrant.

For the latest detailed information on UW Graduate School requirements for thesis committee

makeup, please check the Graduate School Academic Guidelines on Committees (Doctoral) on line at <http://grad.wisc.edu/acadpolicy/> (scroll to “Committees”). The following is directly from that site (edited for Medical Physics):

The Executive Committee of the Medical Physics Department is responsible for approving the composition of all graduate committees. At least three members of the dissertation committee should have a non-zero appointment in the Medical Physics department.

Graduate School requirements for thesis committees (edited for Med Physics) are as follows:

1. The chair or co-chair of the committee must be Graduate Faculty from the student's program, *i.e.*, from Medical Physics. UW-Madison Faculty [Policies and Procedures Section 3.05A](#) stipulates that “the faculty of the Graduate School includes all university faculty defined in holding professional rank (professor, associate professor, assistant professor or instructor) in any department with graduate program authority, including those with zero-time appointments in such departments.” Committee members who have retired or resigned from the University automatically retain Graduate Faculty status for one year; after one year they are permitted to serve as co-chair or other non-Graduate Faculty committee member.
2. Ph.D. Thesis Committees must have at least 5 members, 4 of whom must be UW-Madison graduate faculty or former UW-Madison graduate faculty up to one year after resignation or retirement. At least one of the 5 members must be from outside of the student's major program or major field (often from the minor field). At least 3 members must have a non-zero appointment in the Department of Medical Physics.
3. The required 5th member of a PhD Thesis Committee, as well as any additional members, retains voting rights. They may be from any of the following categories, as approved by the program executive committee (or its equivalent): graduate faculty, faculty from a department without a graduate program, academic staff (including emeritus faculty), visiting faculty, faculty from other institutions, scientists, research associates, and other individuals deemed qualified by the executive committee (or its equivalent).
4. To receive a Ph.D. degree, students can receive no more than one dissenting vote from their committee.

Steps to Follow When Setting up the Thesis Defense

Scheduling the Final Defense:

The final oral examination can be scheduled during the fall, spring or summer semesters via the education tracker web-site. Please note, however, it is Medical Physics policy that there will be no theses defenses during the last two weeks of a semester. This blackout period includes the week preceding finals week and the week of final examinations itself.

A defensible doctoral dissertation draft must be uploaded to the Medical Physics Education & Training portal (<https://www.medphysics.wisc.edu/intranet/student/>) at least **21 days** prior to the defense date. The dissertation defense will move forward and a Doctoral Degree warrant (“final warrant”) will **only be requested** from the Graduate school after the dissertation draft is uploaded. The Graduate School generally requires 21 days to process a warrant request. The thesis should be a complete and final draft, and it should clearly communicate the scientific aspects of the research. The uploaded dissertation draft will be made available to the dissertator’s committee from this web-site (hard copy will be provided by the student if desired). The dissertator will be evaluated based on this submitted draft and no further revision will be allowed prior to the defense. All committee members are designated readers of the dissertation

draft.

Ph.D. Warrant: After uploading and distributing the dissertation draft, and three weeks prior to the final oral examination, a “Ph.D. Final Oral Committee Approval Form” must be submitted electronically to the Graduate School. Any conditions imposed during passage of the Preliminary Exam must be satisfied prior to requesting the chairperson’s signature. The candidate fills this form electronically with the Graduate Program Coordinator before submitting it to the Graduate School. It includes the proposed thesis defense committee members’ full names, Net ID, title, department, thesis title, degree term, and the thesis defense date. The Graduate School will then issue a Ph.D. Warrant, listing the defense date, and the committee members. The warrant will be signed by the members of the Oral Defense Committee after a successful thesis defense.

If any changes are made in the membership of the thesis committee, a revised final oral exam committee form must be submitted and approved via the education tracker web-site before the exam. Changes in dissertation title or date do not require a revised form.

The Oral Exam: The oral examination consists of two parts. During Part I, the candidate delivers a 45-minute presentation, giving an overview of the thesis work and highlighting aspects that are important or significant. Questions during this period are usually to clarify points in the presentation or in the thesis itself. Part I is open to Medical Physics faculty and students.

Part II is a question and answer session, lasting another ~45 minutes. During Part II, the Oral Examination Committee probes more deeply into salient points of the thesis as well as research related to that of the candidate. Part II is attended only by the candidate and the examining committee. The candidate then leaves the room for the committee’s deliberations.

Students will be graded on the following criteria for the Final Defense Examination.

Dissertation

- Demonstrates clear understanding of prior literature
- Extends previously reported work in specific research area
- Adequately describes and justifies research findings for each specific aim such that they could be independently reproduced
- Demonstrates a completion of the proposed specific aims (modified by research direction)
- Organization of the dissertation
- Quality of writing (grammar, spelling, clarity)
- Overall quality of the research
- Overall rigor of research components (theoretical/simulation/experimental/translational)
- Published results in peer-reviewed journal(s) or clear publication potential
- Recognized and applied principles of ethical and scientific / professional conduct of research

Presentation and Examination

- Organization of presented materials
- Clear and concise description of background and objectives / specific aims
- Appropriate use of communication aids and overall quality of the presentation
- Demonstrated understanding of relevant peer-reviewed literature
- Demonstrated understanding of subject matter and concepts
- Demonstrated appropriate critical thinking / reasoning skills
- Demonstrated an ability to synthesize knowledge

Grading for the Final Defense will be performed on a 3-point scale.

- 1- Does not meet expectations
- 2- Meets expectations
- 3- Exceeds expectations

An average score of '2' from each committee member and across each category is needed to obtain a pass. Scores will be entered by each committee member immediately following the examination on the Education & Training portal. A score of '1' in response to any category requires a brief explanation in an associated text box. The committee will then deliberate to reach a consensus decision. Students will be provided the mean and standard deviations across categories along with consolidated comments and suggestions for improvement prepared by the committee chair.

After the Oral Exam: The research advisor has to update the Education & Training portal on the department website on the outcome of the examination, and update this web-site when the final dissertation is completed. Successful completion of the oral examination is followed by any final modifications to the dissertation. The dissertator has 30 days after the successful completion of the thesis defense to upload a final version of the dissertation to the Graduate School and Medical Physics Education & Training portal. Committee member(s) who provide(s) scientific corrections to the dissertation draft will not sign the final warrant until the corrections approved by the committee during the defense have been completed. Corrections to the dissertation should be discussed with the committee member(s) requesting the changes. The dissertator should also upload an electronic version of the signed warrant to the education tracker web-site and all related information.

The dissertation must subsequently be presented to the Degree Coordinator in the Graduate School (Room 217 Bascom Hall) by the Graduate School's deadline if the student wishes to avoid having to register as a dissertator for that semester. The Graduate School Degree and Dissertator Deadlines can be found at <https://grad.wisc.edu/currentstudents/degree/>.

Please submit a complete electronic copy of the thesis to the Medical Physics Department after approval by the Graduate School Degree Coordinator. The Medical Physics Department will pay for binding copies of the thesis for the Medical Physics Library, the Ph.D. recipient's advisor(s), and the recipient. If the Ph.D. recipient wishes to purchase additional copies for themselves or for their family members, he/she may do so at this time.

An electronic copy of the thesis abstract should also be uploaded to the Education & Training portal (use the MS-word template and also e-mail to the Graduate Program Coordinator). This will be published on the department's website.

Summary of the Requirements for the Ph.D. Degree in Medical Physics

The Ph.D. degree is awarded after the student has finished his/her dissertation and has fulfilled all other requirements for the degree. The following list summarizes these requirements.

- a) Completion of the course requirements for the M.S. Degree in Medical Physics, plus such additional course work as may be specified by the student's advisor.
- b) Pass the Oral Ph.D. Qualifying Examination.
- c) Completion of the necessary (usually 9) credits in an approved minor.
- d) Completion of a total of at least 54 graduate level credits, including the courses in a) and c), research credits, and other elective courses.

- e) An overall graduate-level grade-point average of 3.0 (B), not including research credits (990).
- f) Pass the Preliminary Examination.
- g) Presentation of a departmental seminar on the thesis topic.
- h) Completion of any courses or other conditions made by the committee during the Preliminary Examination
- i) One first-author, peer-reviewed journal publication or a submitted manuscript under peer-review in your area of research.
- j) Completion and defense of Ph.D. thesis.
- k) Successful submission of the signed thesis to the Graduate School and the Medical Physics Education & Training portal.
- l) Deposition of an electronic copy and 3 paper copies of the thesis on 32 lb bond paper, meeting Graduate School guidelines, in the Medical Physics Library.
- m) Submission of an electronic copy of the thesis abstract (use the Medical Physics template) and signed final exam warrant to the Medical Physics Graduate Program Coordinator and the Medical Physics Education & Training portal.
- n) Submit two exit forms to the Medical Physics Graduate Program Coordinator.

Responsibilities of Faculty Ph.D. Defense Committee

1. A defensible doctoral dissertation draft should be distributed at least **21 days** before a scheduled defense date to allow adequate time for committee members to thoroughly read the dissertation. The thesis should be a complete, final draft and should be grammatically acceptable.
2. Check for one first author, peer reviewed journal publication or submitted manuscript under peer-review in the students area of research. The candidate should provide an electronic copy of the publication to members of the committee. The warrant should not be signed if this prerequisite is not satisfied.
3. The Oral exam for the dissertation defense consists of two parts.
 - a. **Part 1** is a 45-minute presentation, giving an overview of the research aims, highlighting areas that have been completed based on the Specific Aims of the Preliminary examination.
 - b. **Part 2** is a question and answer session for 45 minutes. The committee will probe more deeply into the salient points of the dissertation and the research conducted by the candidate.
4. The candidate will complete any corrections requested to the dissertation draft. The dissertation advisor will not sign the warrant until the candidate satisfactorily completes revisions / corrections to the dissertation requested by the committee. After the final version of the dissertation is approved, the dissertation advisor will update the Medical Physics Education & Training portal confirming the dissertation is complete.
5. To receive a Ph.D. degree, students can receive no more than one dissenting vote from their committee. Committee members who feel that the dissertation defense does not meet acceptable standards do not have to sign off on the warrant. They will have to then sign the dissent on the dissertation warrant and justify their dissenting view of the dissertation.

Requirements of the Graduate School for the Ph.D. Degree in Medical Physics

Requirements of the Graduate School must be satisfied in addition to those of the department. Starting in Fall 2014, the minimum Graduate School course credit requirements for doctoral students, include completion of 32 credits of graduate course work before becoming a dissertator, with a minimum credit requirement of 54 credits required before graduation. For updated information please refer to the **Graduate School Academic Guidelines**.

Residence Credit Reduction

For the Ph.D. Degree in Medical Physics, residence credit requirements may be reduced by a maximum of 12 credits for a student with prior graduate level coursework in Medical Physics from other institutions or 7 credits for a student with excess (above and beyond undergraduate graduation requirements) graduate coursework in Medical Physics taken during his/her undergraduate education at UW-Madison. For each course taken at another institution, the student, after obtaining advisor approval, must establish that the graduate course taken previously is equivalent to a similar course taught at UW-Madison. A minimum grade of B is required for the prior graduate level course. A letter from the UW-Madison instructor of the course, confirming equivalency or the need for any specific action(s) before equivalency is granted, is required.

Residence credit will be granted at the discretion of the Medical Physics Graduate Committee. No other considerations for waiver of course requirements will be allowed for students who receive Residence Credit reduction. Students who receive a reduction in Ph.D residence credits will not be eligible to receive a M.S. Degree in Medical Physics and will be enrolled in the Ph.D only graduate program.

Graduation for Ph.D. Degree Students

Students must be registered for 3 graded graduate level credits during the semester in which they graduate. In order to graduate, students must remove all grades of incomplete and have a cumulative GPA of at least 3.0. They must also fulfill the Minimum Credit Requirement of the Graduate School. Information on commencement ceremonies can be obtained on the UW-Madison website. **The Commencement Hotline number is 262-9076.**

Degree Certification

Sometimes students need written verification that they do indeed have their degree prior to the time that they actually receive their degree certificate in the mail. Students may request a degree certification letter from the Registrar's Office. You can visit their website at <http://registrar.wisc.edu/> or call 608-262-3811 to request your certification letter. The signed Ph.D. warrant needs to be turned into the Graduate School and processed before the Registrar's Office will know that you have completed your degree. The degrees are processed one time after the semester has ended in December, May or August. Due to the volume of degrees awarded, it will take approximately three to four months after the semester has ended before you will receive your degree certificate.

Department Criteria for Satisfactory Progress

Students with Financial Assistance

For a graduate student in the Medical Physics Department who is a research assistant, fellow or trainee, to be making satisfactory progress, he/she must:

- 1) Maintain a minimum cumulative GPA of 3.0 for all courses taken while in the Medical Physics program and for all Department of Medical Physics courses. All research

courses and all courses with grades of P, F, S or U are excluded from the average.

Any student, who fails to meet the requirement above, will be placed on probation. Failure in the first semester of probation to obtain a 3.0 average for the semester *and a cumulative GPA of at least 3.0* will result in termination unless the student's advisor requests, and the department and the Graduate School approves, continued enrollment. *The particular courses that count toward the GPA in any probation semester must be approved in writing by the student's advisor and the Medical Physics Graduate Committee Chairman in order for the work to count toward returning the student to good standing.*

- 2) Acquire a research advisor by the beginning of the second semester.
- 3) Have taken the Oral Ph.D. Qualifier Examination by the end of the 4th semester of study. If a pass is not obtained on the first attempt, the second (and last) attempt to pass the qualifier examination must be made no later than the end of the 5th semester.

A student who fails the Oral Ph.D. Qualifying Examination will be transferred from the Ph.D. degree program to the terminal M.S. degree program, where he/she will need to complete and defend a written M.S. thesis.

In addition to the above, a Ph.D. candidate must:

1. Have a minor program approved by the Department before taking the preliminary examination.
2. Pass the Preliminary Examination by the end of the third year.
3. Make satisfactory progress in their dissertation research work, as judged by the research advisor.
4. Satisfy all Graduate School requirements including the minimum credit requirement.
5. Produce at least one first-author, peer-reviewed journal publication or a submitted manuscript under peer-review in your area of research.
6. Present a departmental seminar on the Ph.D. dissertation topic.
7. Defend the Ph.D. dissertation by the end of the 7th year of graduate study. A candidate failing to pass the final oral examination within 5 years after passing the preliminary examination must retake and pass the preliminary examination to continue in dissertation status.
8. Submit the final complete dissertation to the Graduate School Degree Coordinator, electronically.
9. Deposit an electronic copy and 3 paper copies of the thesis on 32-lb bond paper, meeting Graduate School guidelines, to the Medical Physics Department. A copy will be bound for the Department Library.
10. Submit an electronic copy of the thesis abstract and thesis to the Medical Physics Graduate Program Coordinator.
11. Submit two required exit forms to the Medical Physics Graduate Program Coordinator

Students with No Financial Assistance

For a graduate student in the Medical Physics Department who is not a research assistant,

fellow or trainee, to be making satisfactory progress, he/she must:

- 1) Carry at least 6 credits each semester (not including Medical Physics 990) with the following exceptions:
 - a) If the student has declared he/she will terminate studies with the M.S. degree, the 6 credits per semester requirement is waived for the semesters beginning after the qualifying examination has been passed.
 - b) If the student has declared that he/she will pursue the Ph.D. degree, the 6 credits per semester requirement is waived for the semesters beginning after the preliminary examination has been passed. However, as a dissertator they will be required to take 3 research credits.
- 2) Follow the same criteria as found under ***Students with Financial Assistance***.

Satisfactory Progress Regarding the Graduate School

Graduate students are reminded that they must also make satisfactory progress as defined by the Graduate School. (See the current Graduate School Academic Guidelines, <http://www.wisc.edu/grad/catalog>.)

Useful Information about Medical Physics

General Information

The **Department of Medical Physics** is located at 1111 Highland Avenue, Room 1005 in the Wisconsin Institutes for Medical Research (WIMR) Tower I. Announcements for general campus information, events notices, course information, financial aid information, and job announcements are posted near the mailboxes and/or at the main entrance to the department. Student mailboxes are located in the hallway behind the main office. Course descriptions and other information about the program are available on the department's web site at <http://www.medphysics.wisc.edu>.

The Department's primary **Conference Rooms** are 1190 and 1121 in WIMR-1 and 2409 in WIMR-2. Meetings and some social functions of the department are held in these rooms. To reserve a conference room for meetings or to schedule it for a thesis defense, contact JoAnn Kronberg at 262-2171 or Lyddia Ruch-Doll at 265-6116.

A convenient bus service, with stops outside the Health Sciences Learning Center, is available for transportation throughout campus. The "Route 80" bus is free on campus. In addition, many students and faculty use bicycles or walk to get to different campus locations. Also, Madison Metro City buses are available free of charge to students.

Students working with radioactive materials or radiation sources in courses and research must wear radiation monitors. **Students should check with their Advisor to see if they are required to get a badge.** To obtain your Radiation Dosimetry Badges/Rings, you will need to take a radiation safety training class. Radiation Safety for Radiation Workers ("RSRW") training format has changed as of September 1, 2010. It now consists of a 2-part training module, made up of both an online and an in-person section. Certification for acquiring a badge requires completion of both Parts I and II. Training details can be found [on-line](#). After completing the course you may apply for a personal radiation dosimeter.

Periodically, your expired radiation monitor needs to be returned and exchanged for your new radiation monitor. Your monitor must be worn when you are working with radioactive materials. New monitors are distributed on a regular basis, at which time your old monitor needs to be returned. You will be responsible for paying for lost monitors. Please return them promptly.

University **phone lines** are for **official university purposes only**. To dial a number on campus, you dial the last five digits of the number (*i.e.*, 265-6504 would be 5-6504). To reach an outside local line, dial "9" then the seven digit number. For long distance calls, there is a state-owned system for most long distance dialing, called State Telephone System (STS), which may be used for all calls including the 50 states plus Mexico and Canada. **The STS System is for official calls only.** To access the STS system, dial an "8", then the area code and phone number. If in an emergency you must make a personal long distance call from an official telephone, call collect or charge the call to a credit card or home number.

The phone number for the **fax machine** in the department is (608) 262-2413. If you are expecting a fax, please have the sender identify your name on the top of the document.

The **Department Coffee Fund** charges \$5 per month or 25¢ per cup for faculty, staff and

students interested in drinking coffee. We use an honor system on the 25¢ per cup payments. Place your money in the cup located next to the coffee machine.

When your **address changes**, you will need to notify the Medical Physics Department Office (Program Assistant and/or Graduate Program Coordinator) and also update the University's records. You can update this information in **MYUW** (option in the top red banner) at the University's web page located at: <http://www.wisc.edu>.

The most up-to-date version of the timetable is on the web. Go to http://registrar.wisc.edu/enrollment_information.htm and click on "Class Search Timetable."

The Division of Informational Technology (DoIT) has a satellite store located in the University Book Store branch in the HSLC Atrium. The hours are 8:00 a.m. – 4:00 p.m. Monday through Friday.

The main Tech Store is located at 1210 W. Dayton Street. Business hours are 7:45 a.m. – 5:00 p.m., Monday through Friday. You can reach the Tech Store showroom at 265-SHOW (265-7469), showroom@doit.wisc.edu or <http://www.doit.wisc.edu/>. The DoIT Help Desk can be reached at 264-HELP (264-4357). Both locations have a walk-in help desk available to serve you.

Through the **Electronic Library**, it is easy to search more than 5.5 million holdings in the campus libraries and more than 30 million journal citations. You can connect to the Electronic Library from your office or home to find out what's on the shelves, to use e-mail reference, or to renew and recall materials. The Electronic Library can be accessed at <http://www.library.wisc.edu>.

Most Medical Physics faculty and students use the UW Health Sciences Ebling Library. The address is 750 Highland Avenue and their phone number is 262-2020. You can access the Ebling Library at <http://ebling.library.wisc.edu/>.

The **Library Express** document delivery and interlibrary loan service supports the instructional, research and scholarly activities of UW-Madison faculty, staff and students. You can access it at <http://www.library.wisc.edu/delivery>. Items relating to personal interests or for entertainment purposes should be requested through the Madison Public Library (LINKCat Catalog - Web version or Madison Public Library Interlibrary Loan Service) or UW System Borrowing service. Use Library Express to obtain books and articles not owned by UW-Madison libraries or to request campus document delivery service. Use the Electronic Journal List to access 8,000 + full-text electronic journals, magazines, newsletters, and newspapers. Use MadCat or MadCat's UW System Borrowing service to request books from UW Madison or the other UW campuses.

Who to Ask For Help

Graduate Program Coordinator: Applications, information on the program, Graduate School policies and procedures, Prelim Exams, Prelim Warrant information, M.S. degree warrant, Ph.D. degree warrant, degree requirements, graduation information, timetable and course planning information, course evaluations, syllabi, alumni information

Graduate Committee Chair or Program Director (Department Chair): Specific information regarding policies and procedures involving the Minor Degree requirements, Oral Qualifier Exam, Prelim Exam, Defense Exam, degree requirements, *etc.*

Payroll and Benefits Specialist: Insurance information, travel expenses, purchasing supplies, keys, radiation badges and rings, after-hours access

Financial Specialists: Fiscal activities

Assistant to the Chair: Schedule appointments with the Department Chair, scheduling conference room, I-9 verification, HIPAA compliance documentation, student status letters to attend professional meetings, *etc.*

Faculty Advisor: Curriculum advising, research, career decisions, official approvals for academic actions, information about the discipline of Medical Physics, student desks/office space, *etc.*

UW-Madison Alumni Association

The University of Wisconsin – Madison Alumni Association has initiated a Career Connections program, which offers alumni and students the chance to meet established professionals from whom they can obtain valuable career information. It is not a job placement or recruiting service, but rather an opportunity for students to network and conduct informal interviews. Students who use the program will be connected to alumni who work in the occupational field they wish to pursue. Contacts can range from a brief phone conversation to joining someone for a “day on the job.” The service also offers workshops and seminars. Contact the Wisconsin Alumni Association, 608-262-2551 or <http://www.uwalumni.com> for more information.

The Association also offers an economical short-term health insurance plan for graduating students.

Campus Resources

Computing

The Division of Information Technology (DoIT). DoIT coordinates instructional and research computing facilities, computer education, and electronic mail accounts for the entire University community. DoIT operates computer labs all over the campus, but its main site is at 1210 W. Dayton Street, where there are terminals, printers, graphics output devices, other peripherals, and computing resources as well as consultants. DoIT regularly introduces its services by providing short, non-credit courses, and students can also take advantage of free peer training classes. The Microcomputer Information Center (MIC) houses a variety of microcomputers, printers, other peripherals, and software. MIC staff are available for consultation on hardware and software options and provide information about discounts available to students, user groups, bulletin boards, and other information services. Journals and other literature are available. MIC services are generally free. The microcomputer lab rents time on microcomputers, letter-quality printers, and laser printers. A Printing Services Card is required for computer printing. For more information, pick up the DoIT resource catalog, which is published every semester. <http://www.doit.wisc.edu>

Electronic Mail. Graduate students should sign up for free email accounts so they can communicate electronically with students, staff, and professors on campus and colleagues at universities and corporations in 120 countries. This official 'wisc.edu' email address should be used for all official university and department business activities. Email from this address should not be forwarded automatically to other outside email accounts. For account activation, visit <http://www.mynetid.wisc.edu/activate> or one of several computer labs to set up an account: Division of Information Technology (DoIT), 1210 W. Dayton Street (24-hour); Memorial Library Lab, 443 Memorial Library; Steenbock Library Lab, 110C Steenbock Library, Letters & Science Learning Support Services Microcomputer Lab, 464 Van Hise; College Library Lab, 2250 Helen C. White Hall, Math Lab, 101 Van Vleck; Wendt Library Lab (no assistant available), first floor Wendt Library.

My UW-Madison

My UW-Madison (my.wisc.edu) is the indispensable campus resource for online information and access to essential communication tools – from Web-based e-mail and calendaring to course enrollment to billing to easily accessible information for students and advisors.

Writing Center

The **UW Writing Center** provides free, non-credit instruction and individual consultation on all types of writing assignments, from simple papers to doctoral dissertations. Many students have found the Center's staff to be quite helpful for writing research papers and constructing dissertation proposals.

Students may make an individual appointment for consultation with an experienced instructor who can help organize ideas, point out possible problems in a draft, or offer advice about revision. Students who need intensive work on their writing can obtain help by scheduling ongoing meetings with an instructor in order to work in a sustained way.

The Center's non-credit courses review basic principles of writing and introduce common forms of academic writing. Course topics include research papers, essay exams, grammar review, review of academic writing for returning adult students, improving style, book reviews, graduate research proposals, critiques of research articles, and more.

The Center is located at 6171 Helen C. White Hall; the phone number is 263-1992. Detailed information and on-line registration are available via the Center's web site at <http://writing.wisc.edu>. You can contact them by e-mail at writing@wisc.edu.

Libraries

UW-Madison has more than 100 libraries across campus. Library tours are available upon request. To schedule a tour, contact the individual library. Phone and e-mail contact information for campus libraries is available at <http://www.library.wisc.edu/libraries>. For a list of Workshops from the Universities Libraries', visit: a specific library, click on features. The website for the Health Sciences Library (Ebling Library) is <http://ebling.library.wisc.edu/>.

Transportation

You can find information on transportation throughout campus, including bus service, bicycle arrangements, and parking facilities, at <http://transportation.wisc.edu/>. Commuting by bike is a simple way to cut down on campus congestion and help preserve the environment. Thousands of students, staff, and faculty commute by bicycle to UW-Madison. Plenty of bicycle racks spaces are available near every campus building for parking and securing.

Convenient bus service is provided throughout the UW campus and the city of Madison. Madison Metro provides daily bus service throughout the city and to some suburbs. About 90 percent of the citizens of Madison are within a quarter of a mile of a bus route. Student bus passes are funded through ASM via segregated student fees and distributed through ASM.

The free campus '**80' bus route** serves WIMR, the UW Hospitals, Eagle Heights, parking lot 60, and the Clinical Science Center on the west side of campus, the Medical Sciences building, the Wisconsin Institutes for Discovery/Morgridge Center, the Engineering campus and the Union South in the middle of campus, and Memorial Union and State Street on the east. The route runs from 6:16 a.m. – 1:55 a.m. weekdays, with a peak frequency of 7-8 minutes. On the weekends, the route begins at 7:55 a.m. and runs every 45 minutes. For more detailed bus route information check out the bus website (listed above).

Passengers may transfer from campus buses to Madison Metro buses along University, Johnson Street, and Park Street. Most buses stop in the campus area. For schedule and route information, call 608/266-4466 or visit the Madison Metro Transit System website at <http://www.cityofmadison.com/metro>.

The Transportation Services Office, 124 WARF Office Building, 263-6666, sells visitor parking permits and bus passes. Parking and transportation **maps and bus schedules** also are available at satellite offices in the American Family Children's Hospital (608) 263-4007. Visitors have a better chance of obtaining space if parking is reserved in advance. All areas have a fee. See <http://transportation.wisc.edu/> for a complete list of available parking options.

University Health Services (UHS)

Clinical Services, at 333 East Campus Mall, 265-5600, provides outpatient primary medical care, nursing, and prevention services, including general medicine, women's clinic, sexually transmitted disease evaluation and treatment, allergy, and dermatology services.

Counseling and Consultation Services, at 333 East Campus Mall, 265-5600, helps students who are experiencing personal stress, career concerns, family or interpersonal conflict, general

anxiety, depression, or other psychological concerns. The staff also provides an after-hours crisis response service at 265-6565.

More information about UHS can be found at its website, <http://www.uhs.wisc.edu>.

Sources of Information

The *Graduate School Catalog* provides an overview of all the programs at UW-Madison that offer graduate degrees, graduate minors, and certificates. It contains general rules and regulations for each program, including policies for admission, course work, and criteria governing satisfactory progress. The most current version of the catalog can be found on the web at <http://www.wisc.edu/grad/catalog>.

The *Graduate School Academic Guidelines* (formerly the *Graduate Student Handbook*) provides the “nuts and bolts,” in-depth information about all policies and procedures of the Graduate School. The Graduate School Office of Academic Services and Fellowship Administration developed this handbook to help answer questions about Graduate School academic and administrative policies and procedures. The [online version](#) on the Graduate School Web site is the official document of record. The Graduate School also has information on “[Completing Your Degree](#)”.

Informational websites for admitted graduate students, current graduate students and for all graduate students can be found at: <http://www.wisc.edu/grad> and <https://grad.wisc.edu/studentlife/>.

About The City

Housing

Places To Live In The Area:

The Campus Assistance and Visitor Center has merged with Student Orientation Programs and together they are now called Campus Information, Assistance & Orientation (CIAO). For information (on a variety of topics) the CIAO is very helpful. They are located at 716 Langdon Street, Madison, WI 53706 (in the red gym). You can reach them by phone at 608/263-2400. The e-mail address is askbucky@uwmad.wisc.edu and the URL is <http://info.wisc.edu>.

On-Campus Housing: The UW-Madison [Division of University Housing](#) offers accommodations for the academic year for single graduate men and women in four locations: there are single and double rooms in the Rust-Schreiner House, Davis House, and Merit House, and one- and two-bedroom furnished apartments on Harvey Street. The University also maintains student family housing for the entire year at Eagle Heights (one-, two-, and three-bedroom unfurnished apartments) for students with a spouse, domestic partner, or child. Many of these accommodations (especially family housing) have long waiting lists or early application deadlines, so students must consider housing options well in advance of the time they will need them. Applications for graduate student residence halls are accepted as of October 1st for the following academic year. For students beginning their studies in the spring, applications are accepted as of June 1st. For more information about campus housing, write to: Division of University Housing, Assignment Office, Slichter Hall, 625 Babcock Drive, Madison, WI 53706, or call 608/262-2522.

Off-campus Housing: Many types of off-campus housing are available, including rooms, efficiencies, co-ops, apartments, and houses. The Campus Information, Assistance & Orientation office maintains a current list of vacancies. Other places to look include the city and campus newspapers and the bulletin boards in the lobbies of both student unions. Most property owners in the campus area require a one-year lease. Monthly rent prices in Madison vary widely depending on location, whether or not utilities are included, the size and amenities of the unit, and so on. Check with the following sources for more information:

Visitor & Information Programs

716 Langdon Street, Madison, WI 53706-1481 (in the red gym)

608/263-2400, askbucky@uwmad.wisc.edu, <http://info.wisc.edu>

Madison Community Co-ops

1202 Williamson Street, Suite C.

Madison, WI 53703

608/251-2667, <http://madisoncommunity.coop/>

Tenant Resource Center

1202 Williamson Street, Suite A

Madison, WI 53703

608/257-0006, <http://tenantresourcecenter.org>

Housing:

(on-campus) <http://www.housing.wisc.edu>

(off-campus) <http://housing.civc.wisc.edu/>

There are also free publications available at news-stands, grocery stores, libraries, etc.:

Start Renting: <http://www.startrenting.com>
Apartments for Rent Magazine: <http://www.forrent.com>
Search for apartments: <http://www.apartmentsource.com>
Campus Area Housing: <http://campusareahousing.wisc.edu>
Apartment Living Guide: <http://www.aptlivingguide.com>
Madison Campus & Down Town Living: <http://www.CDLiving.com>

Other Sources of Information

The Greater Madison Chamber of Commerce, 615 E. Washington Avenue, P.O. Box 711, Madison, WI 53701, phone 608/256-8348, <http://greatermadisonchamber.com/>, has information on recreation, shopping, restaurants, and hotels. City maps are also available for a nominal fee from the Chamber of Commerce. City information and events of interest are listed in the free weekly newspaper, *Isthmus*, and the two daily newspapers, the *Wisconsin State Journal* and *The Capital Times*. Other useful sources of local information are Wisconsin Public Radio (WHA 99.7 AM or WERN 88.7 FM), operated on the UW campus, and community-sponsored "Back Porch Radio" (WORT 89.9 FM).

Web Sites

Below are some web site addresses and information to get you started.
Join in and get involved! Have fun!!

Wisconsin Welcome

Various locations, events and dates vary. Although geared toward undergraduates, graduate students may be interested in participating in some events, and are welcome to attend any event. Contact Visitor and Information Programs (VIP) at (608) 263-0367; <http://info.wisc.edu/campus-tours>

Wisconsin Welcome Events: <http://www.newstudent.wisc.edu/>

(See other related links for new or incoming students.)

Helpful University Web Sites:

Graduate School Homepage: <http://grad.wisc.edu>
Dean of Students Homepage: <https://students.wisc.edu>
Office of Student Financial Services: <http://finaid.wisc.edu>
Registrar's Office: <http://registrar.wisc.edu>
University of Wisconsin Homepage: <http://www.wisc.edu>
Campus Map: <http://www.map.wisc.edu>

Events Calendars:

Athletic Department: <http://www.uwbadgers.com>
Wisconsin Week: <http://today.wisc.edu>

Wisconsin Union: <http://www.wisc.edu/union>

Weather: <http://www.meteor.wisc.edu/weather/index.html>
<http://www.channel3000.com/weather>

Madison Metro Transit System: <http://www.cityofmadison.com/metro>

Attractions:

Museums and Galleries:

Geology Museum: <http://www.geologymuseum.org/>

Department of Art: <http://www.art.wisc.edu>

7th floor, Humanities Building, 455 N. Park St.

Open during normal building hours. 608-262-1660

The Department of Art exhibits undergraduate and graduate student works in the gallery on the seventh floor of the Humanities Building.

Memorial Union Galleries:

800 Langdon St. Open during normal building hours. 608-262-1660

The Memorial Union offers a number of different galleries featuring diverse exhibits throughout the year. Check the campus events calendar (<http://www.today.wisc.edu>) under Ongoing Exhibits for a listing of current shows.

Performing arts:

Wisconsin Union Theater: <http://www.uniontheater.wisc.edu>

School of Music Concerts: <http://www.music.wisc.edu>

Athletic Events:

Athletic Ticket Office: <http://www.uwbadgers.com>

The Kohl Center:

http://www.uwbadgers.com/facilities/kohl_center.html

The Kohl Center is the new home of Badger basketball and hockey. The \$76-million state-of-the-art facility also is a venue for state tournaments, concerts, family shows and university events. The Kohl Center is located at 601 W. Dayton Street, and the phone number is 608/263-5645 (KOHL)

Campus Natural Areas:

Howard Temin Lakeshore Path

The Lakeshore Path runs for two miles along Lake Mendota on the northern edge of the campus. Beginning near the Memorial Union and ending at picnic point, the path is a popular destination for bicyclists, joggers and walkers.

UW Arboretum: <https://arboretum.wisc.edu/visit/>

The Arboretum at 1207 Seminole Highway, a 1,240-acre outdoor ecological laboratory for research and instruction, provides examples of major plant communities in the Midwest. (608-263-7888)

Allen Centennial Gardens: <http://allencentennialgardens.org>

The Allen Centennial Gardens at the corner of Observatory and Babcock Drives includes English, Victorian and New American Gardens.

Madison:

City of Madison: <http://www.cityofmadison.com>

Greater Madison Convention & Visitors Bureau:
<http://www.visitmadison.com>

Madison Online: <http://www.madline.com>

Dane County: <http://www.countyofdane.com/>

State of Wisconsin: <http://www.wisconsin.gov/Pages/home.aspx>

Wisconsin State Journal newspaper: <http://host.madison.com>

Forms and Tables

ACADEMIC CALENDAR FOR 2016-2021

(as amended by the Faculty Senate at its meeting on 5 October 2015)

FALL SEMESTER	2016	2017	2018	2019	2020
Faculty contract year begins	Aug 29 (M)	Aug 28 (M)	Aug 27 (M)	Aug 26 (M)	Aug 24 (M)
Instruction begins	Sep 6 (T)	Sep 5 (T)	Sep 4 (T)	Sep 3 (T)	Sep 2 (W)
Labor Day	Sep 5 (M)	Sep 4 (M)	Sep 3 (M)	Sep 2 (M)	Sep 7 (M)
Thanksgiving recess	Nov 24-27	Nov 23-26	Nov 22-25	Nov 28-Dec 1	Nov 26-29
Last class day	Dec 15 (R)	Dec 15 (F)	Dec 14 (F)	Dec 13 (F)	Dec 15 (T)
Study day	Dec 16 (F)	Dec 16 (S)	Dec 15 (S)	Dec 14 (S)	Dec 16 (W)
Exams begin	Dec 17 (S)	Dec 17 (N)	Dec 16 (N)	Dec 15 (N)	Dec 17 (R)
Exams end	Dec 23 (F)	Dec 23 (S)	Dec 22 (S)	Dec 21 (S)	Dec 23 (W)
Commencement	Dec 18 (N)	Dec 17 (N)	Dec 16 (N)	Dec 22 (N)	Dec 20 (N)
Official graduation date	Dec 24 (S)	Dec 24 (N)	Dec 23 (N)	Dec 22 (N)	Dec 24 (R)
Last day grades in	Dec 29 (R)	Dec 29 (F)	Dec 28 (F)	Dec 27 (F)	Dec 29 (T)
MWF days	42	43	43	43	43
TR days	29	29	29	29	29
SPRING SEMESTER	2017	2018	2019	2020	2021
Instruction begins	Jan 17 (T)	Jan 16 (T)	Jan 14 (M)	Jan 13 (M)	Jan 11 (M)
Martin Luther King Jr. Day	Jan 16 (M)	Jan 15 (M)	Jan 21 (M)	Jan 20 (M)	Jan 18 (M)
Spring recess	Mar 18-26	Mar 24-Apr 1	Mar 16-24	Mar 14-22	Mar 27-Apr 4
Classes resume	Mar 27 (M)	Apr 2 (M)	Mar 25 (M)	Mar 23 (M)	Apr 5 (M)
Last class day	May 4 (R)	May 3 (R)	May 2 (R)	Apr 30 (R)	Apr 29 (R)
Study day	May 5 (F)	May 4 (F)	May 3 (F)	May 1 (F)	Apr 30 (F)
Exams begin	May 6 (S)	May 5 (S)	May 4 (S)	May 2 (S)	May 1 (S)
Exams end	May 12 (F)	May 11 (F)	May 10 (S)	May 8 (F)	May 7 (F)
Commencement weekend	May 12-14	May 11-13	May 10-12	May 8-10	May 7-9
Official graduation date	May 13 (S)	May 12 (S)	May 11 (S)	May 9 (S)	May 8 (S)
Last day grades in	May 18 (R)	May 17 (R)	May 17 (R)	May 15 (F)	May 14 (F)
Faculty contract year ends	May 28 (N)	May 27 (N)	May 26 (N)	May 24 (N)	May 23 (N)
MWF days	43	43	43	43	43
TR days	30	30	30	30	30
SUMMER SESSIONS	2017	2018	2019	2020	2021
Memorial Day (observed)	May 29 (M)	May 28 (M)	May 27 (M)	May 25 (M)	May 31 (M)
3-week session begins	May 30 (T)	May 29 (T)	May 28 (T)	May 26 (T)	May 24 (M)
3-week session ends	Jun 16 (F)	Jun 15 (F)	Jun 14 (F)	Jun 12 (F)	Jun 11 (F)
4-week session begins	May 15 (M)	May 14 (M)	May 13 (M)	May 11 (M)	May 10 (M)
4-week session ends	Jun 9 (F)	Jun 8 (F)	Jun 7 (F)	Jun 5 (F)	Jun 4 (F)
8-week session begins	Jun 19 (M)	Jun 18 (M)	Jun 17 (M)	Jun 15 (M)	Jun 14 (M)
Independence Day (observed)	Jul 4 (T)	Jul 4 (W)	Jul 4 (R)	Jul 4 (S)	Jul 5 (M)
8-week session ends	Aug 11 (F)	Aug 10 (F)	Aug 9 (F)	Aug 7 (F)	Aug 6 (F)
Official graduation date	Aug 27 (N)	Aug 26 (N)	Aug 25 (N)	Aug 23 (N)	Aug 22 (N)

* Observances of Jewish holidays begin at sunset on the day preceding that which is listed as the holiday.

** Islamic holidays are based on the lunar cycle, and dates may vary by one day from those listed.

***RELIGIOUS OBSERVANCES POLICY

In accordance with regent and faculty policy, faculty are asked not to schedule mandatory exercises on days when religious observances may cause substantial numbers of students to be absent from the university. Some religions mark observances over multiple days, which may begin at sunset on the day preceding the posted date(s) of the holiday. **Conflicts may occur for religious observances other than those identified in the calendar.** A listing, though not exhaustive, of religious holidays is available on-line at www.interfaithcalendar.org.

Medical Physics Department
Preliminary Warrant Application Checklist

Student's Name: _____ Date: _____

Student ID #: _____

Semester & Year Enrolled: _____

Pass on Qualifying Examination. Date: _____

Received Master's Degree. Semester/Date: _____

Completed Minor Requirement Option A (Department _____) OR Option B

Date: _____ Credits: _____ Minor GPA: _____

Completed Ph.D Course Requirements

Date: _____ Credits: _____ GPA: _____

Courses with 'Incomplete' grades: Yes No

___ Updated an IDP every Fall Term (Date: _____)

Preliminary Examination Committee (Minimum Five (5) members)

Research Advisor (s): _____

Committee members: _____

Prospectus title: _____

Additional Requirements

Before Submitting the Application for the Preliminary Exam warrant

1. You should have fulfilled all Master's Degree Requirements plus additional coursework as specified by your advisor.
2. You should have passed the Qualifying Examination.
3. Schedule the Preliminary Exam with your committee (Note, the Preliminary Exam warrant needs to be requested **at least** 3 weeks prior to exam)
4. File the Preliminary Exam warrant, signed by your committee before the first day of classes of a given semester (otherwise register as a non-dissertator that semester).
5. You should have completed your graduate level course credits, minor credits (9 credits), and other elective credits. You will be allowed to only take 3 credits each semester after successful completion of your Preliminary Exam.
6. Your Preliminary exam committee must be approved by the Graduate Chair prior to requesting the Preliminary Exam warrant. Four members of the committee should be tenured or tenure-track faculty. At least three members of the preliminary examination committee should have a non-zero appointment in the Medical Physics department. One member may be CHS track or clinician track.
7. You must submit copies of your Research prospectus to your committee members at least 14 days prior to the examination.
8. You must submit an electronic copy of the prelim prospectus to the Medical Physics Graduate Program Coordinator.

After successful completion of Preliminary Examination

1. You are eligible to be a dissertator. As a dissertator, you have to be enrolled for 3 credits (typically research, MP990) continuously until the final oral defense of your dissertation.
2. You must continue to make satisfactory progress on dissertation research work as judged by your research advisor. Besides regular meetings with your research advisor, you have to meet annually with your research committee.
3. Some students are required to take additional courses in areas judged weak during the Preliminary Exam. Before applying for the final exam warrant, all such conditions must be satisfied.
4. You are required to present a departmental seminar on your research, usually within the semester of graduation.
5. Write a satisfactory dissertation reporting the results as determined by the research advisor and dissertation Committee.

Medical Physics Department
Thesis Defense Application Checklist

Student's Name: _____ Date: _____

Student ID #: _____

Semester & Year Enrolled: _____

- Completed 54 graduate level credits
- Presented Departmental seminar Semester/Date: _____
- One first-author peer-reviewed journal publication
- Ph.D Degree Semester/Date: _____
- Thesis Defense Committee (Minimum Five (5) members)

Research Advisor (s): _____

Committee members: _____

Dissertation title: _____

Contact information after degree completion: _____

Board Examination Status (Which board certification process do you plan to enter?)
____ ABR ____ CCPM ____ ABMP ____ ABSNM ____ None

Have you taken Part I of a Board exam? (If so, state the exam and year taken.)

Additional Requirements

Before Submitting the Application for the Thesis Defense warrant

1. Upload/submit your final dissertation draft to the Medical Physics web-site.
2. The Dissertation Defense warrant needs to be requested **at least** 3 weeks prior to exam. Work with the Graduate Program Coordinator to apply for this warrant
3. You should have completed 54 graduate level credits, minor credits (9 credits), and other elective credits.
4. The warrant for your defense must list the members of the thesis defense committee. Four members of the committee should be tenured or tenure-track faculty. At least three members of the preliminary examination committee should have a non-zero appointment in the Medical Physics department. One member may be CHS track or clinician track. One member should be from outside the department.
5. Have one first-author, peer-reviewed journal publication or a submitted manuscript under peer-review in your area of research prior to your dissertation defense.

After successful completion of the Thesis Defense Congratulations!

6. Supply three copies of your corrected dissertation to the Medical Physics Library on BOND paper.
7. Supply electronic version of abstract to Graduate Program Coordinator.
8. Supply electronic and paper versions of Program Termination Information form to Graduate Program Coordinator.
9. Return all Medical Physics keys and library books that you have checked out.
10. Turn in your Alumni Update Form to the Graduate Program Coordinator.

Provide us information on your immediate career plans

- Take an Assistant Professor position
- Enter a therapy physics residency
- Enter an imaging physics residency
- Take a junior medical physicist position
- Take a post-doctoral position
- Enter another degree program
- Take a job in industry

- Other:

Department of Medical Physics
University of Wisconsin – Madison
Department Directory Information Form

To: Medical Physics Students
From: Deb Torgerson

Please complete the form below and return it to Deb Torgerson, 1008 WIMR, by September 10th.

Name:	
Degree in Progress (Circle One): MS PhD	Are you a Dissertator? ____ Yes ____ No
Home Address:	Office Room Number:
Home Phone:	Office Phone Number:
	Lab Room Number:
	Lab Phone Number:
Advisor's Name:	
Spouse's Name:	
E-mail Address:	
Anticipated Graduation Date: Fall Spring Summer ____ Year	

Please indicate which option you will be taking:

Core Curriculum Opt Out of Core Curriculum Health Physics

[If Opting out, Approved by Advisor (___/___/___) and Approved by Graduate Chair (___/___/___)]

Areas of Interest in Medical Physics:

- _____ Biomagnetism: Imaging and Physiology
- _____ Medical Imaging Physics
 - _____ CT and X-ray Imaging
 - _____ Medical Image Processing
 - _____ Magnetic Resonance Imaging
 - _____ Nuclear Medicine and PET
 - _____ Ultrasound Imaging and Elastography
 - _____ Optical Imaging
- _____ Radiation Therapy and Radiation Physics
 - _____ Brachytherapy
 - _____ Conformal Therapy/Tomotherapy
 - _____ Health Physics
 - _____ Image-guided Radiation Therapy
 - _____ Proton and Neutron Metrology
 - _____ Radiation Dosimetry
- _____ Other: _____

Last Semester Check-Out List

- _____ Make sure all incompletes are taken care of and final grade changes reported.
- _____ Request Ph.D. Degree Warrant by appropriate deadline email the Graduate Program Coordinator with the following information: Date of Exam, Term for Degree, Your Title, Committee Members' FULL Name, Net ID, Title, and Department.)
- _____ Supply electronic version of Ph.D. abstract to the Graduate Program Coordinator.
- _____ Supply electronic versions of **Program Termination Information and Alumni Update form** (use the electronic fillable form available on the Medical Physics web page) to Graduate Program Coordinator.
- _____ Return all Medical Physics **keys** and library **books** that you have checked out.
- _____ Congratulations!!

Campus Map

<http://www.map.wisc.edu>