TRAINEE HANDBOOK

Department of
Physics & Astronomy

MEDICAL PHYSICS & HEALTH PHYSICS PROGRAM

Department of Physics and Astronomy Louisiana State University and A&M College and
Mary Bird Perkins Cancer Center Baton Rouge, LA

Academic Year 2022-2023

CAMPEP ACCREDITED
MS Degree: 2006-2026
PhD Degree: 2011-2026
Post-Doctoral Training Certificate: 2014-2026

Contents

I. Introduction

A. About This Handbook

This handbook is a vital resource to trainees enrolled in the LSU/MBPCC Medical Physics and Health Physics Program. Incoming students will find that the handbook provides a wealth of information to facilitate their orientation with the program. All students should use the handbook as their starting point for finding information on more complex tasks, such as convening advisory committee meetings, preparing research proposals, and defending dissertations. The handbook also provides helpful sample timelines and checklists of degree requirements to be completed.

The handbook is intended to serve as a reference. That is to say, students should read up on various topics as they come up. All commonly encountered topics can be found in the table of contents or by searching an electronic copy of the handbook. Trainees should consult the handbook prior to seeking help from faculty, staff, or other students.

The handbook, in its current form, was written in 2015. Each year it is revised and refined to better meet the information needs of trainees. Substantive additions and revisions in this year's edition appear are in blue font. Second and higher-year students should skim the new addition to become aware of changes relevant to their particular courses of study. While we still provide selected student forms in the handbook for reference, students should use fillable electronic forms, which are available at https://www.lsu.edu/physics/graduate-programs/medical-physics/handbook.php and https://www.lsu.edu/graduateschool/forms.php

Due to the evolving situation with the COVID-19 and Monkey Pox, we refer to the LSU website for guidance at https://www.lsu.edu/roadmap/index.php. Please be diligent in keeping on top of completing your various tasks, monitoring your email accounts for important announcements, and remain flexible as we adapt to a fluid situation. Do anticipate that few minor problems will occur; budget extra time to be able to meet deadlines. We will all work together, do our parts, and things will function smoothly.

Enjoy the handbook and best wishes with your studies.

Wayne Newhauser, PhD
Program Director

B. Program Overview

To meet ongoing demand of hospitals, clinics, and industry for medical physicists and health physicists, LSU's Department of Physics and Astronomy offers a Master of Science degree in Medical Physics and Health Physics, a PhD in Physics with a concentration in Medical Physics, and a post-doctoral certificate (PDC) program. The M.S. degree program is oriented toward professional training, and students graduating from the program are well prepared for entry-level professional positions (including medical physics residencies) and for professional board certification exams. The PhD program provides similar preparation plus in-depth training in academic research; students graduating with the PhD are prepared for post-doctoral and/or residency training positions in medical physics, or entry-level academic or professional positions, as well as for professional board certification exams. The PDC program provides an alternate pathway for holders of a PhD degree in hard science or engineering fields (from a program that was not accredited by CAMPEP, Inc.) to become eligible to enter the field of medical physics.

Graduate students spend one year in the classroom learning the fundamentals of medical and health physics, radiation biology, and human anatomy. Next, students in the medical physics concentration learn to apply the knowledge gained in the classroom. For two semesters these students take additional courses in medical physics and receive clinical training and experience by working side-by-side with medical physicists, medical dosimetrists, and radiation oncologists at Mary Bird Perkins Cancer Center. Students in the health physics concentration take additional courses in applied nuclear science to prepare them for careers at hospitals, industrial companies, and national laboratories that use radiation sources.

MS students in both the medical physics and health physics concentrations are required to complete a thesis based on hypothesis-driven research. The thesis is typically begun by the fall semester of the second year and should be completed by the end of the Spring semester of the third year. A manuscript describing the thesis research is expected to be submitted for publication in a peer-reviewed scientific journal.

For the PhD program, students typically spend the first year following the same academic plan as that of the MS program. At the end of the first year, students take the PhD qualifying exam in medical physics. In the second year, students continue with advanced coursework in medical physics, physics, and other elective topics.

PhD candidates subsequently embark on hypothesis-driven dissertation research. An oral General Examination, typically on the proposed dissertation project, is completed near the end of Year 2. The final dissertation defense culminates the PhD program. The doctoral research is expected to result in publications in peer-reviewed scientific journals.

PDC students complete classroom courses covering six major topical areas. There are two tracks available to PDC students. A standard track includes research activities and typically requires two to three years. An accelerated track can be completed in a few as two semesters and includes only coursework.

C. Program Objectives

1. Medical Physics

The Medical Physics component of the Program is designed for individuals who seek the M.S. and/or Ph.D. degree, or a post-doctoral certificate, and wish to be educated in medical physics. The Program's objective is to prepare the student for one or more of the following:

- A career as a professional medical physicist in a clinic, government, or industry.
- To enter a PhD program.
- To enter a medical physics residency training program.
- To enter a post-doctoral training program.

Subsequent to graduation, many students seek clinical training in a medical physics residency program, advanced research training in a PhD degree program, or advanced research training in a post-doctoral training fellowship.

2. Health Physics

The Health Physics component of the Program is designed for individuals who seek the M.S. degree and wish to be educated in health physics. The Program's objective is to prepare the student for one or more of the following:

- A career as a professional health physicist in the academy, industry, and government.
- To enter a PhD program. Note that LSU does not currently offer a PhD degree in Health Phyisics.

D. Graduate Student Orientations

Incoming graduate students typically have many questions. Any and all questions will be answered in an orientation process. Some of the mandatory major orientation activities are listed below.

1.) Visit the LSU Graduate Schools website at https://www.lsu.edu/graduateschool/index.php. Under "New Student Checklist" you will find guidance on getting started with graduate studies. It is important that you take care of all of these items before the respective deadlines.

2.) Plan to attend several distinct orientation sessions.

a. An Orientation to the Medical and Health Physics Program will take place 12:30 -2:30 PM on Friday, Aug 26 in Room 435 of Nicholson Hall. You will receive a copy of our Trainee Handbook, which contains guidance on most aspects of our program.

b. The International Students Organization will hold an orientation on August 12. They will announce details.

c. The LSU Graduate School's orientation will be held Aug 17 They will announce details.

d. The Department of Physics and Astronomy provides two orientations, one for incoming graduate students (Aug 15) and another for orientation for teaching assistants (Aug 19). The department will announce details.

e. An additional orientation is required for international students. See https://www.lsu.edu/intlpro/is/prospective-students/arrival-services/orientation.php for details. The main purpose of the International Student Orientation program is for all F-1 and J-1 to "report" to the University. International Services is required by U.S. Immigration law to report that you have arrived at LSU, but we cannot do that until you attend International Orientation and complete some immigration-related paperwork.

E. Student Advising

The student's main advisor is the either the program director or major professor (research supervisor). If the student has been matched to a major professor, the major professor is the student's main source of advising, although the program director remains available throughout the student's graduate studies.

The main advisor will meet with the student to confirm satisfactory progress or to ascertain the nature, scope, and magnitude of any major problem. Depending on this ascertainment, the advisor may provide guidance to the student (e.g., regarding issues impeding progress toward degree completion). A major professor may refer the student to the program director at his or her discretion. A main advisor may refer a student to other qualified individuals or units as appropriate (e.g., department chair, Dean of Graduate School, student health office, and title IX office) to a particular situation.

Accreditation standards require that the program director monitors the performance of each student. This monitoring typically occurs via several methods; discussions with students, discussions with faculty advisors, and review of written Supervisory Committee Reports (typically submitted twice per year).

Note that this section was added in the 2022-23 edition in response to a recommendation from the most recent CAMPEP reaccreditation, received in CTY 2022. The text describes existing student advising without any changes in policy.

F. Program Office

The Program Manager of the Medical Physics and Health Physics Program is Paige Whittington she can be a resource to assist students with education issues. The program office is located at 444 Nicholson Hall on the LSU campus. The program office follows regular business hours, namely, from 7:30 AM to noon and again from 1:00 PM to 4:00 PM, on Monday through Friday. Be aware that there will occasionally be days on which coverage is not available. Please plan accordingly.

II. Training Programs

A. M.S. Degree in Medical Physics & Health Physics

1. Curriculum

The Medical Physics Concentration requires a minimum of 43 semester hours of coursework, consisting of 33 hours of didactic courses, 4 hours of clinical training, and at least 6 hours of thesis research.

The Health Physics Concentration requires 33 hours of coursework, plus a minimum of 6 hours of thesis research. Students in this concentration usually do not participate in the clinical training.

The tables below list courses in both concentrations. The number of credits are in parentheses.

1. Required Courses (both concentrations)

Hrs.	Course Num.	Name
(3)	MEDP-4111	Introduction to Medical Imaging
(3)	MEDP-4331	Radiation Protection and Exposure Evaluation
(2)	MEDP-4351	Radiation Detection and Instrumentation
(1)	MEDP-4352	Radiation Detection Laboratory
(3)	MEDP-7121	Radiobiology
(3)	MEDP-7530	Radiation Shielding
(3)	MEDP-7537	Radiation Interactions and Transport
(1)	MEDP-7995	Medical Physics and Health Physics Seminar
(6)	MEDP-8000	Thesis Research

2. Additional Required Courses (Medical Physics Concentration)

Hrs.	Course Num.	Name
(3)	MEDP-7111	Advanced Medical Imaging Physics
(3)	MEDP-7210	Clinical Principles of Radiation Therapy
(4)	MEDP-7260	Clinical Radiation Therapy Rotation
(3)	MEDP-7270	Advanced Radiation Therapy Physics
(3)	MEDP-7331	Radiation Therapy Physics

3. Prerequisites

Hrs.	Course Num.	Name
(3)	KIN- 2500	Anatomy (or MEDP Anatomy and Physiology)

4. Electives

Hrs.	Course Num.	Name
(1-4)	MEDP-4991	Special Problems in Medical Physics and Health Physics
(1-4)	MEDP-4992	Special Topics in Medical Physics and Health Physics
(3)	MEDP-7538	Monte Carlo Simulation of Radiation Transport
(1-3)	MEDP-7991	Advanced Projects in Medical Physics & Health Physics (6-h max
(1-3)	MEDP-7992	Advanced Topics in Medical Physics & Health Physics (6-h max)
(1-6)	MEDP-7999	Research Investigation (12-h max)
(3)	NS-4352	Environmental Radiological Evaluation and Remediation
(3)	NS-4570	Nuclear Facility Safety

2. Research Supervisor and Supervisory Committee

Each student will be assigned a research supervisor. Typically, the matching of students and supervisors is a process that begins shortly after matriculation and concludes after the completion of the first year. In some cases, students may already be assigned a research supervisor immediately upon admission. Matches are proposed by a student and/or supervisor pair and, upon successful review of the proposal, approved by the Program Director. See Timeline to Completion elsewhere in this section of Trainee Handbook regarding typical timing of the match.

The process of matching to a research supervisor is described in considerable detail in MEDP-7995 Seminar. This includes preparations, guidance on interacting with faculty to explore joining their laboratory, and practice interviews. For brevity of this Handbook, students are referred to the MEDP-7995 course for additional information on that topic.

Each student is required by the Medical Physics and Health Physics Program to have an approved Supervisory Committee. The Supervisory Committee is charged with:

a. assisting the student in developing a research project that is approved by the program,
b. mentoring the student in completing his or her research,
c. mentoring the student's writing of the research, and
d. evaluating the student's research via the written thesis and public defense. The Supervisory Committee shall recommend the Examination Committee (may be itself), which shall be compliant with Graduate School guidelines, to the Department Chair and Dean for approval.

Membership Guidelines*

The Supervisory Committee shall be composed of at least four, but no more than five members with the following requirements:

1. The chair of the Committee must be a full or associate member of the graduate faculty.
2. The chair or co-chair must be a member of the graduate school (full, associate, or affiliate) and must be a medical or health physicist who is a member of the Medical Physics Program faculty (regular or adjunct). His or her area of research should be consistent with that of the student's research topic.
3. There should be at least one member who is a member of the Department of Physics faculty and is neither a medical physicist nor health physicist.
4. There should be at least 2 members who are members of the Medical Physics Program faculty (regular or adjunct).
5. There may be no more than two non-faculty members of the Committee. All such members should be appointed to the Committee based on their ability to contribute resources or experience that would benefit the student's resource.

**These guidelines are consistent with the 2012-2013 LSU Graduate Bulletin. Because LSU guidelines occasionally change, it is recommended that the student review and follow the most recent edition of the graduate bulletin regarding the membership guidelines.*

A form to request approval of a supervisor committee is in the appendix.

3. Thesis

A thesis, whose quality is sufficient for submission for publication in a refereed journal, is required. The student should begin the selection of a thesis topic and Supervisory Committee during the summer at the end of the first year. This should be followed no later than the spring semester of the second year by the submission of a Research Plan, approved by the student's Supervisory Committee, to the Medical Physics Program Office.

The M.S. thesis is considered complete upon (1) the student delivering a public seminar, (2) the student passing an oral examination on the thesis by members of the Examining Committee and other interested faculty, and (3) submission of the final written version having been signed by all members of the student's Examining Committee. The Examining Committee may require that a paper reporting on part or all of the thesis be submitted for publication in a refereed scientific journal prior to final approval of the thesis.

The student is expected to write at least a first draft of at least one manuscript based on the thesis work for submission for publication in an appropriate peer-reviewed scientific journal. See additional guidance on this below.

Guidelines from the Department of Physics and Astronomy

Overview

The M.S. thesis is a required component of the M.S. in Medical Physics and Health Physics degree within the Department of Physics and Astronomy. A thesis must fulfill Program, Department, and University requirements.

Program Expectations

The M.S. thesis and shall be the result of hypothesis-driven research in the area of medical physics (therapy or imaging physics) or health physics, according to the branch of the program declared by the student. The M.S. thesis shall demonstrate the student's ability (1) to conduct scientific research under the supervision of qualified faculty researchers (2) to effectively communicate the research in writing (thesis) and verbally (public seminar), and (3) to defend the research (public defense and faculty examination).

The *expectation* of the Program is that the M.S. thesis research be published in an appropriate peer-reviewed scientific journal. Typically, M.S. thesis research projects should lead to one to three publications, depending on several factors. Examples of appropriate peer-reviewed scientific journals include Medical Physics; Physics in Medicine and Biology; Journal of Applied Clinical Medical Physics; International Journal of Radiation Oncology, Biology Physics; Radiation Research; Health Physics. The paper(s) should be published, at press, or accepted for publication prior to completion of the defense.

Exceptions may be made to accommodate the sometimes-differing timelines of degree completion and publication. The publication of manuscripts are reviewed by a pool of anonymous volunteer faculty and scientists. Consequently, the length of time and degree of difficulty in successfully completing the manuscript review process is highly variable. Therefore, it is not uncommon that work toward publication of a manuscript continues after completion of degree requirements. In this case, it is the expectation that the student will complete this work in a diligent and timely manner.

That being said, it is highly recommended that all students prepare a complete and near-final draft of the manuscript(s) prior to leaving the program. This task involves considerable

interaction between the student and his or her major professor. Students have best access to their advisor while they are in the program. Also, the final preparations of a manuscript are most efficiently done while the material is fresh in the authors' memories. In short, it is best to start early and to make every attempt to complete as much as possible prior to leaving the program.

Theses may be written in two basics styles, the traditional style, and the European style. The traditional style is self descriptive and example theses in this style are available from the program website, the LSU library (https://digitalcommons.lsu.edu/), the Medical Physics Library at LSU. Several recent graduates from our program wrote European style theses (see for example the MS thesis from Suman Shrestha and the PhD dissertations from Will Donahue, Chris Schneider, and Lydia Wilson). The European style basically is a hybrid approach in which the thesis comprises some material that is especially written for the thesis and other material that is written for publication as an original research article in a peer reviewed journal. Students should consult with their major professor in deciding which thesis style to use.

The European style thesis offers many advantages to the students and supervising faculty. First and foremost, this approach streamlines the writing process by eliminating duplication of writing of the same material for a publication and a traditional style thesis. This should help students graduate on time and to ensure that research manuscripts are submitted for review in scientific journals. The program is strongly supportive of the European style thesis. All students should consult the graduate school's guidelines regarding theses and dissertations (https://www.lsu.edu/graduateschool/). Among other things, the guidelines describe the proper use for previously published material, portions of which are excerpted below.

The use of published articles in a dissertation carries certain responsibilities. In all cases, you must:

- Obtain departmental approval.
- Adhere to the requirements for unity set forth in the section above, using special care to integrate your published material into your document logically.
- Be the principal author (the first listed) of the published article.
- Obtain written permission from the journal to use the published material in your dissertation. Without this written permission and proof of authorship, no thesis or dissertation containing the student's previously published work will be accepted by The Graduate School. When requesting this permission, be certain to mention that your dissertation will be viewable on the web.
- The letters requesting and granting permission(s) to use the article(s) must appear as an appendix in your dissertation.
- The following acknowledgment must appear at the bottom of the first page of each published chapter or section: "This chapter [section] previously appeared as [authors' names, article title, and publication data]. It is reprinted by permission of [copyright holder's name—see the permission letter for proper acknowledgment phrase.]"

Each thesis is unique and depends on the nature and scope of the research, the style of thesis, and other factors. The quality and length of the thesis are perhaps the two important characteristics from the perspective of the program. More specifically, the program has very high expectations on the quality of the research, writing, and figures and tables. Regarding length, students should write concisely so that their complete thesis is not longer than 60 to 70

pages in length. Additional material may be published in internal reports or, if absolutely essential, in appendices of the thesis. For theses over 70 pages in length, students should anticipate that their major professor and supervisory committee members will require extra time to read and edit thesis drafts. Plan to provide one extra day for each page in excess of 70 pages. This applies to each review cycle.

It is not the intention to dictate the characteristics of individual theses. Rather, it is the intention of the program to provide guidance based on experience from students who were successful in writing concise, high-quality theses, while completing their degree requirements on time.

Guidelines from the Graduate School

In the spring of 1991, a task force of the Council of Graduate Schools issued the following statement on the role of the dissertation and dissertation research:

The doctoral dissertation should (1) reveal the student's ability to analyze, interpret, and synthesize information; (2) demonstrate the student's knowledge of the literature relating to the project or at least acknowledge prior scholarship on which the dissertation is built; (3) describe the methods and procedures used; (4) present results in a sequential and logical manner; and (5) display the student's ability to discuss fully and coherently the meaning of the results. In the sciences, the work must be described in sufficient detail to permit an independent investigator to replicate the results. The dissertation is the beginning of one's scholarly work, not its culmination. Dissertation research should provide students with hands-on, directed experience in the primary research methods of the discipline, and should prepare students for the type of research/scholarship that will be expected of them after they receive the Ph.D. degree (Excerpt from A Policy Statement: The Role and Nature of the Doctoral Dissertation).

Faculty Supervision

Each student is required to have an approved Supervisory Committee. (Details of the composition of the Supervisory Committee are outlined below.) The Supervisory Committee is charged with:

1. assisting the student in developing a research project that is approved by the Program,
2. mentoring the student in completing his or her research,
3. mentoring the student's writing of the thesis research, and
4. evaluating the student's research via the written thesis and public defense.

The student should meet regularly with his or her supervisor, and meetings with the Supervisory Committee should occur as needed, not to exceed 6 months between meetings. Scheduling meetings is the responsibility of the student.

A few guidelines follow regarding the scheduling of committee meetings. They should normally be scheduled

1.) after the first week of class of any given semester

2.) before the last week of class of any semester

3.) at least two weeks prior to the end of final exam week of any semester

Work with your advisor to prepare a list of 3 or 4 proposed dates and times. Contact faculty and/or their support staff to poll the invitees (for example, Doodle polls work well for this). One the date and time of a meeting has been set, the student should send out a "calendar invitation" (e.g., using Outlook or similar) to participants. As appropriate, send directions and

parking instructions to committee members, e.g., to those who do not normally work where the meeting will be held.

M.S. Thesis Project Approval

Each student shall develop a proposal for their thesis research project. The research proposal details the student's research plan, academic status and plan, and demonstrates the student's knowledge of various aspects of the proposed field of research. Specifically, the areas of knowledge include competence in physics, familiarity with literature, and rudimentary skills in written scientific communication.

Proposals are written by the student under the supervision of the student's principal research advisor, or advisor. Once the advisor is satisfied that the proposal is reasonably mature, the student submits the written proposal to the student's advisory committee. The student also orally presents the proposal to the advisory committee, who typically provide constructive criticism and other feedback that is helpful in finalizing the project proposal. Typically, the revisions required by the advisory committee are reviewed and approved within a few weeks. The advisory committee members indicate their approval by signing the cover page of the proposal. After approval by all committee members, the student submits the proposal to the Program Director for his approval and for program record keeping purposes.

A mature draft of a student's proposal is typically submitted to the supervisory committee by February 1 of the spring semester of 2nd year of study. After a period not less than 3 weeks (i.e., sufficient time to allow the committee members to read the proposal), the student presents the research proposal and seeks advice and approval from the committee. Depending on the scope of any revisions that may be required by the committee, final proposals are typically approved within several weeks. In all cases, all required approvals should be obtained before the end of the Spring semester of the student's second year.

The format of the research thesis proposal is not prescribed by the program. For reference, typical NIH predoctoral proposals contain the following components

1.) "Specific Aims" (1 page)
2.) "Research Strategy" (6 pages)
3.) "Bibliography and References" (no explicit limit, but be judicious)
4.) "Facilities & Other Resources" and "Equipment" (no explicit limit). Note that a template document is available that lists the program facilities and resources. Normally only minor modifications are needed to suit a particular project proposal.
5.) "Other Research Training Plan Sections" (no explicit limit). This is optional and should only be included if needed.
6.) "Biosketch" of student in NIH format (2 pages) (optional for MS students)
7.) "Appendix" (no explicit limit). This is optional and should only be used if needed.

Additional training and information on writing research proposals will be provided in MEDP 7995 (Seminar). Also see NIH instructions for application for an F-31 predoctoral fellowship.

Regarding the format of the proposal, a font size of 11 points or larger. Use standard paper size (8 ½" x 11). Use at least one-half inch margins (top, bottom, left, and right) for all pages. No information should appear in the margins. Additional resources and tips of relevance to proposals are at http://grants.nih.gov/grants/writing_application.htm.

The same basic proposal components are required for both MS and PhD research projects. However, an MS project is typically smaller in scope and complexity than a PhD research project. These differences are easily accommodated within the common framework for proposals. It is underscored that there is no explicit minimum requirement on the overall length of the proposal. The requirements specify the maximum number of pages allowed. These page limits are intended to guide the student on the relative proportions of the various components and to limit the overall size of the proposal.

The preparation of a research proposal is an important part of the students' education and training. Student must work closely with their principal research advisor throughout this process. In addition, the student will receive valuable advice from his or her supervisory committee. Numerous additional resources are available to the student, including formal instruction in writing a proposal (MEDP-7995 Seminar Class), online materials, writer's workshops, online electronic library resources, etc.

Thesis/Dissertation Distribution

The student will provide electronic copies of the thesis to the Department, Program, all members of the Supervisory Committee. The thesis shall comply with University, Department, and Program guidelines.

Journal Publication

It is expected that the student submit a paper based on the M.S. thesis for publication in an appropriate peer-reviewed scientific journal prior to graduation. This effort is beneficial in that it (1) contributes knowledge to the scientific field, (2) provides documented approval and widespread availability of the student's efforts, and (3) meets expectations and provides necessary support to the faculty members for their academic development and ability to acquire and successfully complete externally-funded research, which supports the students, as well as faculty research efforts.

M.S. Thesis Timeline Expectations

To guide the students and faculty, the Program has the following expectations regarding completion of the student's thesis.

Year 1, Semester 02: Introduction to Faculty Research
Year 1, Semester 03: Training in Research Methods
Year 2, Semester 04: Part-time Research Effort
Year 2, Semester 05: Formation of Supervisory Committee; Completion of M.S. Thesis Research Plan
Year 2, Semester 06: Full-time Research Effort
Year 3, Semester 07: Full-time Research Effort
Year 3, Semester 08: Completion of M.S. Thesis, Defense, and Paper Submission
Year 3, Semester 09: Completion of Outstanding Requisites for Graduation

Student Writing Resources

1.) LSU Writing Center: https://www.lsu.edu/academicaffairs/cxc/ (accessed 27 Aug 2021).

4. Clinical Rotation (Medical Physics Concentration Only)

The student must complete one 4-credit hour clinical rotation (MEDP-7260 Clinical Radiation Therapy Rotation), which should take place in the Fall semester of the second year. The rotation consists of spending ½ day (morning or afternoon) in the radiation therapy clinic at MBPCC under the supervision of clinical medical physicists, and additional time in group activities or observation.

5. Final Exam and Thesis Defense

The Medical Physics and Health Physics Program faculty recommends that all Final Exams / Dissertation Defenses be conducted in a consistent fashion for all candidates and committees. The membership of the exam committee must follow current policies of the LSU Graduate School, the Dept. of Physics & Astronomy, and the Medical Physics and Health Physics Program. The required sequence of events is described elsewhere in this handbook, e.g., submission to the complete thesis to the supervisory committee at least 3-weeks prior to the defense.

We suggest the following format and content for the Final Exam and MS Thesis Defense:

- The Exam / Defense should comprise a public research presentation by the candidate followed by a private examination between the candidate and the committee.
- The research presentation will typically be around 45 minutes in length, with an additional 15 minutes for questions by the public audience.
- The research presentation should provide a coherent overview of the candidate's dissertation research, including review of background and motivations, aims, research methods, key results and outcomes, interpretation and conclusions, and future directions.
- The length of the private examination is determined by the candidate's committee.
- The private examination typically will focus on the candidate's research, although the committee may pursue other relevant lines of inquiry about core knowledge and specialized topics as deemed appropriate.
- All committee members must have an opportunity to ask questions of the candidate, either during the public presentation or in the private examination.
- With the concurrence of the committee members, the committee chair can invite non-committee faculty with relevant interests or expertise to observe the private exam. Observers do not have input into the outcome of the examination.

Following the defense, we encourage the candidate to follow up with committee members regarding questions asked, recommendations for edits to the dissertation, etc.

MS thesis defenses may be held at LSU or MBPCC.

6. Typical Academic Plan (Medical Physics Concentration)

Year 1, Semester 1, Fall 2015

(3) MEDP-4331 Radiation Protection and Exposure Evaluation
(2) MEDP-4351 Radiation Detection and Instrumentation
(1) MEDP-4352 Radiation Detection Laboratory
(3) MEDP-7537 Radiation Interactions and Transport
(1) MEDP-7995 Medical Physics and Health Physics Seminar

Year 1, Semester 2, Spring 2016

(3) MEDP-4111 Introduction to Medical Imaging
(3) MEDP-7121 Radiobiology
(3) MEDP-7530 Radiation Shielding
(3) MEDP-7331 Radiation Therapy Physics
(1) MEDP-7995 Medical Physics and Health Physics Seminar

Year 1, Semester 3, Summer 2016

(3) KIN-2500 Anatomy (or MEDP replacement course)
(3) MEDP-7098 Advanced Topics in Medical Physics and Health Physics

Year 2, Semester 4, Fall 2016

(3) MEDP-7111 Advanced Medical Imaging Physics
(4) MEDP-7260 Clinical Radiation Therapy Physics Rotation
(3) MEDP-7270 Advanced Radiation Therapy Physics
(1) MEDP-7995 Medical Physics and Health Physics Seminar
(1) MEDP-8000 Thesis Research

TARGET DATE FOR FORMATION OF SUPERVISORY COMMITTEE

Year 2, Semester 5, Spring 2017

(3) MEDP-7210 Clinical Principles of Radiation Therapy
(6) MEDP-8000 Thesis Research

Year 2, Semester 6, Summer 2017

(6) MEDP-8000 Thesis Research

Year 3, Semester 7, Fall 2017

(9) MEDP-8000 Thesis Research

Year 3, Semester 8, Spring 2018

(9) MEDP-8000 Thesis Research

The following details the typical sequence of key items specifically related to research activities.

<u>Fall, Year 01</u>

- No action.

Spring, Year 01

- Faculty members present their research during Medical Physics and Health Physics Seminar.
- Program Director presents lecture on developing a Research Plan.
- Program Director meets with first-year graduate students near end of semester to advise them on future research direction.

Summer, Year 01

- Student enrolls in MEDP-7098 Research Methods.
- Students who have previously completed Anatomy may enroll in MEDP-7991, MEDP-7992, or MEDP-8000 for the purpose of working with a prospective research supervisor.

Fall, Year 02

- Student enrolls in MEDP-8000 for appropriate number of hours (typically 1 h) with faculty member who can assist student in developing an MS thesis research plan.
- With assistance from and approval by the Program Director, a student is matched to a research supervisor.

Spring, Year 02

- Student enrolls in MEDP-8000 for appropriate number of hours (typically 4 h) with faculty Supervisor.
- With assistance from faculty Supervisor and Program Director, student forms a Supervisory Committee by submitting appropriate form (Appendix C) to Program Office for approval.
- Student develops research plan with assistance from his or her Supervisor and Supervisory Committee. Once acceptable to Supervisory Committee, the research plan is submitted to Medical Physics Committee.
- Student performs research on MS thesis as time permits.

Summer, Year 02

- Student enrolls in MEDP-8000 for 6 hours with faculty Supervisor for MS thesis research.
- Student works full time on MS thesis research.

Fall, Year 03

- Student enrolls in MEDP-8000 for 9 hours with faculty Supervisor for MS thesis research.
- Student works full time on MS thesis research.

Spring, Year 03

- Student enrolls in MEDP-8000 for 9 hours with faculty Supervisor for MS thesis research.
- Student begins writing of MS thesis. First draft of thesis should be submitted to Supervisory Committee approximately 3 months before expected completion date.
- Student conducts Public Seminar and Defense with approval of Supervisory Committee, which normally becomes Examining Committee, in accordance with Graduate School procedures.
- Student completes and submits MS thesis to Graduate School in accordance with Graduate School procedures.

- Student writes and submits first draft of a manuscript on their research to refereed medical physics journal.

Summer, Year 03

- If all work in Spring 03 semester is not completed, student enrolls in MEDP-8000 for 6 hours with faculty Supervisor for completion of MS thesis, Public Seminar and Defense, and submission of manuscript.

7. Typical Academic Plan (HP Concentration)

Students in Health Physics concentration are expected to complete MS thesis requirements within two years. The timeline is similar to that for Medical Physics concentration. It is adjusted on an individual basis to meet the two-year time limit.

Year 1, Semester 1, Fall 2014

(3) MEDP-4331 Radiation Protection and Exposure Evaluation
(2) MEDP-4351 Radiation Detection and Instrumentation
(1) MEDP-4352 Radiation Detection Laboratory
(3) MEDP-7537 Radiation Interactions and Transport
(1) MEDP-7995 Medical Physics and Health Physics Seminar

Year 1, Semester 2, Spring 2015

(3) MEDP-4111 Introduction to Medical Imaging
(3) MEDP-7121 Radiobiology
(3) MEDP-7530 Radiation Shielding
(3) NS-4352 Environmental Radiological Evaluation and Remediation
(1) MEDP-7995 Medical Physics and Health Physics Seminar

Year 1, Semester 3, Summer 2015

(3) KIN-2500 Anatomy (or MEDP replacement course)
(0-3) MEDP-7991 Advanced Projects in Medical Physics and Health Physics, or
(0-3) MEDP-7992 Advanced Topics in Medical Physics and Health Physics

Year 2, Semester 4, Fall 2015

(3-6) Elective courses from approved set (see below)
(1-3) MEDP-7991 Advanced Projects in Medical Physics and Health Physics or
(1-3) MEDP-7992 Advanced Topics in Medical Physics and Health Physics
(1) MEDP-7995 Medical Physics and Health Physics Seminar

TARGET DATE FOR FORMATION OF SUPERVISORY COMMITTEE

Year 2, Semester 5, Spring 2016

(3) NS-4570 Nuclear Facility Safety
(3) Elective courses from approved set (see below)
(3-6) MEDP-8000 Thesis Research

Year 2, Semester 6, Summer 2016

(6) MEDP-8000 Thesis Research

Elective Courses may be selected from the following, as example:

(3) MEDP-7111 Advanced Medical Imaging Physics
(3) MEDP-7331 Radiation Therapy Physics
(3) MEDP-7538 Monte Carlo Simulation of Radiation Transport
(1-3) MEDP-7991 Advanced Projects in Medical Physics and Health Physics
(1-3) MEDP-7992 Advanced Topics in Medical Physics and Health Physics

8. Timeline To Completion

This section enhances the student's knowledge of planning and scheduling for a timely completion of the MS in Medical Physics degree program. The guidelines are summarized in two tables. The first table list selected key deadlines, with the goal of orienting the student to plan and assess progress toward degree completion. These key deadlines provide a simple and convenient way for the student to monitor and assess progress toward a timely degree completion in June of the 3rd year. Table 2 contains a detailed and complete list of activities and completion dates. That information is helpful in understanding the scope of the many specific activities.

Table 1. Selected key deadlines during the final 6 months of study for the MS degree in Medical Physics and Health Physics.

Date	Milestone(s)	Comments
15 December	Required classes are completed. Scientific portions of research project are complete. Writing of thesis is in progress	
15 February	Advisor has received complete draft of thesis from student.	
15 March	Thesis has been sent to supervisory committee.	
07 April	After receiving supervisory committee's approval, submit defense forms. Submit complete draft of manuscript to advisor.	
01 May	Pass defense	
15 May	Submit thesis (with any required revisions) to graduate school for review of format.	Final approval by graduate school by early June* will enable student to register as "degree only" for summer
01 June	Receive grad school's approval of thesis*, complete exit process.	

* Last day for approval listed in graduate school calendar. If deadline not met, student will have to register as "degree only" in fall semester.

In the table below, the timeline is based on the approval date of the final thesis by the LSU Graduate School, and measures deadlines backward from that point. For degree-only registration in the semester of graduation, the Final examination must occur no later than the last day of the prior semester; the final approval of the thesis by the Graduate School must occur by the last day to add classes of the degree-only semester.

Deadline*	**Task**	**Notes**
2 months† (*-61 wks*)	Research (phase 1)	Literature review, initial research, etc.
minimum -4 weeks (*-52 wks*)	Writing and revisions of proposal	Proposal preparation can (should) overlap with Research (phase 1)
-2 wks (*-48 wks*)	Give penultimate version of proposal to Advisor for review	Advisor requires no less than 2 weekends to review and comment (check with Advisor for actual time constraints)
-1 wk (*-46 wks*)	Revise penultimate version of proposal	Revisions obtained from Advisor by student
-2 wks (*-45 wks*)	Distribute ultimate version of proposal to Committee	Committee requires no less than 2 weekends to review and comment
--	1st Committee Meeting	Proposal presentation for Committee
~5 months† (*-43 wks*)	Research (phase 2)	Student is advised to begin compilation of thesis during this time
--	2nd Committee Meeting	Status update; presentation to Committee. Suggested schedule is ~3/4 of way through Research period
minimum -8 wks (*-21 wks*)	Writing and revisions of thesis	Typically, no less than two complete iterations of thesis document between student and Advisor. Writing can (should) overlap with Research (phase 2)
minimum -2 wks (*-13 wks*)	Give penultimate version of thesis to Advisor for review	Advisor requires no less than 2 weekends to review and comment (check with Advisor for actual time constraints)
-1 wk (*-11 wks*)	Revise penultimate version of thesis	Revisions obtained from Advisor by student
-2 wks (*-10 wks*)	Distribute ultimate version of thesis to Committee	Committee requires no less than 2 weekends to review and comment
-1 wk (*-8 wks*)	Last (3rd) Committee Meeting	Presentation (mock defense) to committee. If acceptable, committee approves scheduling of defense.
minimum -3 wks (*-7 wks*)	Submit *Exam Request* form	*Exam Request* form is signed by Advisor (Committee Chair), routed through MEDP Program Office and Physics Graduate Advisor
-2 wks (*-4 wks*)	Final Examination	Public seminar and defense of thesis. *Exam Results* form routed by Advisor via MEDP Program Office
--	Implement final Committee revisions	*Thesis Approval* form routed by Advisor via MEDP Program Office
-2 wks (*-2 wks*)	Submit final version of thesis to Graduate School	For review and stylistic corrections by Grad School Editor
0	Final approval of thesis	Email confirmation sent by Graduate School to student and committee

*Specified as relative time prior to the subsequent deadline and (*absolute*) amount of time prior to completion

†Typical duration; actual length will vary depending on project and student/advisor

Tips and Traps to Graduating on Time

Do:

1.) Do be proactive in developing and maintaining your unique timeline. Your advisor will provide assistance and guidance.
2.) Do coordinate closely with your advisor at every stage.
3.) Do anticipate some contingencies and include some safety margin in your timeline. The guidelines presented here do not include any extra time for writer's block, unexpected absences of the student or faculty, personal issues, and professional tasks (obtaining letters of reference, job applications, interviews, relocations, etc.).
4.) Do remember that faculty members have other commitments and obligations, some of which cannot be rescheduled. Consequently, expect that their availability will not coincide exactly with your needs.
5.) Do assume scheduling of committee meetings and defenses will require significant advance planning. The availability of supervisory and examination committees as a whole is typically much more limited because each faculty member has his/her own unique scheduling constraints.
6.) Do be prudent and wise in requesting time commitments from your advisor and committee members.
7.) Do remember that finding a position can be time consuming. The residency matching process may require that a student interviews with numerous residency programs. The amount of time needed for this may be large and should be taken into account in the student's plans and time management for the final year of study.
8.) Do consider having a spare member on your committee. This can help in overcoming scheduling problems. The rules on committee rosters are provided elsewhere in this guidebook.

Don't:

1.) Don't assume that your advisor and committee will be able to drop pre-existing commitments in order to accommodate last-minute scheduling requests.
2.) Don't assume that deadlines for degree requirements can be negotiated at the last minute.
3.) Don't procrastinate in completing any of the degree requirements, even ones that may seem relatively small or unimportant. Note that sustained, high levels of effort and organization are needed during the entire final year of studies.
4.) Don't assume that additional commitments of funding will automatically be made available by the program to cover your assistantship if you are late in completing your degree requirements.

B. PhD in Physics (Medical Physics)

1. Curriculum

Table 1 lists the core course requirements for the Ph.D. degree in Physics (Medical Physics), which includes 11 courses (27 credit hours) in Medical Physics courses plus a course in human anatomy (3 credits). The credits from the anatomy course are not counted toward the completion of the Ph.D. degree because the course is taught at the undergraduate level. The core coursework follows the recommendations of CAMPEP [1].

Table 1. Core course requirements for the Ph.D. degree in Physics (Medical Physics).

Index	Course ID	Course Name	Credit Hours
1	MEDP-4111	Introduction to Medical Imaging	3
2	MEDP-4331	Radiation Protection and Exposure Evaluation	3
3	MEDP-4351	Radiation Detection and Instrumentation*	2
4	MEDP-4352	Radiation Detection Laboratory*	1
5	MEDP-7111	Advanced Medical Imaging Physics	3
6	MEDP-7121	Radiobiology	3
7	MEDP-7331	Radiation Therapy Physics	3
8	MEDP-7530	Radiation Shielding	3
9	MEDP-7537	Radiation Interactions and Transport	3
10	MEDP-7995	Medical Physics and Health Physics Seminar**	1
11	MEDP-7260	Clinical Radiation Therapy Rotation	4
12	KIN-2500	Human Anatomy#	3

* Fulfills PHYS 7398 Graduate Laboratory requirement

** Fulfills PHYS 7857 Graduate Seminar requirement. Students typically enroll in MEDP-7995 for multiple semesters; only 1 credit counts toward degree requirements.

Required for eligibility to sit for American Board of Radiology certification exam in radiological physics. Credits are not counted toward Ph. D. degree because of 2000 level course number. A MEDP replacement course may be offered for this course.

In addition to the core courses, students must complete advanced (elective) courses in medical physics and in one or more disciplines outside of medical physics. The advanced (elective) courses in medical physics comprise a set of 7 courses (15-24 credit hours), of which each student is required to complete at least 3 courses (9 credit hours). Table 2 lists these courses.

Table 2. Advanced (elective) courses in Medical Physics offered for the Ph.D. degree in Physics (Medical Physics).

Index	Course ID	Course Name	Credit Hours
1	MEDP-7210	Clinical Principles of Radiation Therapy	3
2	MEDP-7270	Advanced Radiation Therapy Physics	3
3	MEDP-7538	Monte Carlo Simulation of Radiation Transport	3
4	MEDP-7991	Advanced Projects in Medical Physics and Health Physics	1-3
5	MEDP-7992	Advanced Topics in Medical Physics and Health Physics	1-3
6	MEDP-7098	Radiation Physics Research Methods	3
7	MEDP-7999	Research Investigation	1-6

For the outside advanced (elective) courses, each student is required to complete at least 6 credit hours (typically two three-credit courses) in graduate-level physics, chemistry, biology, and engineering, or related field. The selection of advanced (elective) courses must be approved by the student's Supervisory Committee.

In addition, students are required to register for research credit hours. The total number of research credit hours is not explicitly prescribed. However, full-time graduate students are expected to register for at least nine credit hours in the fall and spring semesters and six hours in the summer term. Typically, most credit hours earned in the first four semesters are from core and elective courses; credit hours from research predominate in subsequent semesters. The maximum number of research credits is implicitly limited by the requirement that the program for the doctoral degree must be completed within seven years from the time a student is classified as a doctoral student.

The total credit hours for the degree of Ph.D. in Physics (Medical Physics) is defined as the sum of credits from all core courses, elective courses, and research courses, as described above. The required total number of credit hours for the degree of Ph.D. in Physics (Medical Physics) is the same as that for the degree of Ph.D. in Physics.

2. Qualifying Examination

Background and General Description

Each prospective doctoral student is required to qualify for the status of pre-doctoral candidate. The qualification includes generally satisfactory grades, fulfillment of the core curriculum, and other requirements as set forth in Refs. [1, 2]. In addition, each student must pass a written Qualifying Examination. The results of the Qualifying Examination provide:

1.) an assessment of the student's prospects for success in the doctoral program,

2.) an assessment of the student's mastery of *graduate* level material covered in the Medical Physics core curriculum, or

3.) a basis for the student to petition the Medical Physics Program for a waiver for one or more core course requirements if the student was admitted to the medical physics program having completed the core course requirements at another CAMPEP or ABET accredited institution, and

4.) an assessment of each student within his or her peer group.

The Qualifying Examination is administered once per year, typically in August. The dates, times, and location(s) of the exam will be announced at least four weeks prior to the start of the exam. The qualifying examination is a written examination that is given in multiple parts, which are described later in this document. The questions for the Qualifying Examination are chosen by the Medical Physics Qualifying Examination Committee. The type, content, and number of questions may be adjusted by the exam committee from one year to the next. This document provides guidance for preparing for the exam; exam questions from previous Qualifying Examinations will not be made available to students. A passing score is 60% at the Ph.D. level.

The Qualifying Examination is mandatory for prospective Ph.D. students, and it is optional for terminal MS students in the Medical Physics program. For terminal MS students who elect to take the Qualifying Examination, the results will be valid for a period of five years *e.g.*, to accommodate students who later enter the Ph.D. program in Physics (Medical Physics), either immediately after graduation or after having separated from the LSU graduate school, *e.g.*, to work, because of medical leave, *etc*.). A student may normally sit for the examination twice. If a passing score is not achieved in the first two attempts, the student may seek permission from his supervisory committee to sit for the exam a third and final time.

The exam should normally be attempted during the first year of study. It must be passed within the first two years that the student is in the program. In the event of failing the exam, the student must take the exam when it is next offered. A student who retakes the exam must take the entire exam. Students are strongly urged to give a full effort in every attempt at the Qualifying Examination.

Description of the Qualifying Exam

The Qualifying Exam comprises three parts; each part covers three subjects (see Table 1). The exam probes for knowledge of medical physics at the graduate level, including the application of general physics and anatomy to medical physics. Specifically, the examination seeks to quantify the student's competencies, including general knowledge (using simple questions), ability to apply general knowledge (moderately complex questions), and ability to synthesize solutions using multiple concepts (most complex questions). To answer any given question, the examinee may have to utilize the following approaches: mathematical derivation, analytical reasoning, memorization, and combinations thereof.

Table 1. Structure and subjects of the Qualifying Examination.

Part I	**Part II**	**Part III**
General Physics	Radiation Protection	Radiation Therapy Physics
Radiation Physics	Radiation Shielding	Imaging Physics
Radiation Detection	Radiation Biology	Anatomy

The Qualifying Exam will be administered in three parts over the period of three consecutive days. Table 1 lists the subjects covered by each part of the exam. The exam for each subject will require one hour and 10 minutes. A 10-minute break will be provided between subjects.

Students are not allowed to use books, notes, computers, programmable calculators, or other electronic devices or materials during the examination.

The examination will be graded by medical physics faculty members and the score will be reviewed by the Qualifying Examination Committee. Results of the exam will be provided to the student within approximately 2 weeks of the end of the exam.

Preparation Guide for the Qualifying Examination

To prepare for the examination, student should be prepared to solve problems that are similar to those in homework assignments and examination questions from the following courses:

MEDP-4331 Radiation Protection and Exposure Evaluation

MEDP-4332 Radiation Detection Laboratory
MEDP-4351 Radiation Detection and Instrumentation
MEDP-7537 Radiation Interactions and Transport
MEDP-4111 Introduction to Medical Imaging
MEDP-7121 Radiobiology
MEDP-7530 Radiation Shielding
MEDP-7331 Radiation Therapy Physics
KIN-2500 Human Anatomy (or MEDP replacement course)

For the General Physics subject exam, students should be prepared to answer questions of relevance to the materials covered in the courses listed above. Previous Qualifying Examinations are not available to students.

References

[1] http://catalog.lsu.edu/content.php?catoid=14&navoid=1053#requirements-for-the-doctor-of-philosophy-degree (accessed 08 Aug 2022)
[2]c**atalog.lsu.edu/index.php** (accessed 08 Aug 2022)

3. Research Supervisor and Supervisory Committee

Each student will be assigned a research supervisor. Typically, the matching of students and supervisors is a process that begins shortly after matriculation and concludes after the completion of the first year. In some cases, students may already be assigned a research supervisor immediately upon admission. Matches are proposed by a student and/or supervisor pair and, upon successful review of the proposal, approved by the Program Director. See Timeline to Completion elsewhere in this section of Trainee Handbook regarding typical timing of the match.

The process of matching to a research supervisor is described in considerable detail in MEDP-7995 Seminar. This includes preparations, guidance on interacting with faculty to explore joining their laboratory, and practice interviews. For brevity of this Handbook, students are referred to the seminar course for additional information on that topic.

Each student is required by the Medical Physics and Health Physics Program to have an approved Supervisory Committee. The Supervisory Committee is charged with:

1.) assisting the student in developing a research project that is approved by the program,
2.) mentoring the student in completing his or her research,
3.) mentoring the student's writing of the research, and
4.) evaluating the student's research via the written thesis and public defense. The 4. Supervisory Committee shall recommend the Examination Committee (may be itself), which shall be compliant with Graduate School guidelines, to the Department Chair and Dean for approval.

Doctoral committees* must have a minimum of 3 committee members. Furthermore,

1. All three committee members must be members of the graduate faculty.
2. The major professor, who acts as chair or co-chair, must be from the major department.

3. If either an adjunct or a non-tenure track faculty member is the major professor, a full-time tenured or tenure/track graduate faculty member must co-chair the committee
4. At least one-half of the graduate faculty on doctoral committees must be full-time tenured or tenure-track faculty at LSU.
5. A minimum of 2 of those faculty members must be from the student's major department and at least one of whom must be a full member of the LSU graduate faculty.
6. The remaining members may be from the major department or may be from outside the department if pertinent to the student's area of concentration, with the proviso that at least one of the remaining members must be a full member of the graduate faculty.
7. Any declared outside minors require representation, either among the first 3 members of the committee or by additional appointments to the committee.

The committee must meet at least once every 6 months. The committee report should be completed and distributed within 5 business days of the committee meeting. The student is responsible to assemble the components of the report, including both parts of the committee meeting report form (Appendix D) and a copy of materials presented at the meeting (*e.g.*, slides on progress, an up-to-date academic plan with timeline to graduation). The student should distribute a complete copy of the report to each member of the committee and to the MEDP program office.

**These guidelines were created to be consistent with the 2012-2013 LSU Graduate Bulletin. Because LSU requirements and guidelines occasionally change, it is recommended that the student review and follow the most recent edition of the graduate bulletin regarding the membership guidelines.*

4. General Exam

This appendix reviews the requirements of the PhD General Exam for students in the LSU Medical Physics and Health Physics Program. The requirements for the PhD General Exam adhere to the conditions set by the Graduate School and by the Department of Physics and Astronomy. Additional guidelines on the format and other aspects of the exam are made by the Program. It is the responsibility of the prospective examinee to be aware of and to comply with all requirements and recommendations.

Requirements of the Graduate School

The requirements of the Graduate School for the General Exam are provided in the LSU General Catalog under the chapter "The Graduate School", section "Requirements for the Doctor of Philosophy Degree", subsections "Advisory Committee" and "General Examination" [1]. The requirements are summarized here. The General Catalog and the Departmental Graduate Advisor are the best sources for information about the requirements.

A student must be enrolled for at least 1 to 3 credit hours in the semester when the General Exam is taken; students on probation cannot take the General Exam.

The Graduate School requires a minimum of three members of the graduate faculty on the student's Advisory Committee. The composition of the examination committee is

proposed to the Graduate School with the "Request for General Exam." This request must be submitted to the Graduate School no less than 3 weeks prior to the scheduled exam date. Any changes to the examination committee must be approved by the Graduate School in advance of the exam.

The General Exam Committee is formed from the Advisory Committee along with one or more additional members. The major professor acts as the chair or co-chair of the committee; if either an adjunct or a non-tenure track faculty member is the major professor, a full-time tenured or tenure-track graduate faculty member must co-chair the committee. At least one-half of the graduate faculty on doctoral committees must be fulltime tenured or tenure-track faculty at LSU. A minimum of two members must be from the student's major department, at least one of whom must be a full member of the LSU graduate faculty. The remaining members may be from the major department or may be from outside the department if pertinent to the student's area of concentration; if the student is completing a minor, at least one committee member must be from the minor department. One required additional member is the Dean's Representative, who is appointed by the Dean of the Graduate School.

Exams may occur any time that the University is open for business. General Exams must be held on the LSU campus, with all committee members present. Members cannot participate remotely in an examination, except in exceptional circumstances with prior approval by the Graduate School. All committee members, including the Dean's Representative, vote on the outcome of the exam. A student cannot pass the exam with more than one dissenting vote. The votes of all committee members are recorded and submitted to the Graduate School.

Requirements of the Department

The requirements of the Department of Physics and Astronomy are posted in the Brief Guide to Graduate Studies available on the departmental website [3]. The requirements are summarized here.

The General Exam must be completed by the end of the student's fourth year, though it is greatly to the student's advantage to complete it sooner. Many faculty members are reluctant or unable to commit research support to students until they have passed their General Exam. The General Exam can occur only after the student passes the Qualifying Exam and should occur approximately one year later.

The General Exam consists of two parts:

1. An oral special topics exam covering general knowledge in the student's area of study. This comes in the form of questions from the committee answered by the student.
2. An oral defense of a written thesis proposal.

Recommendations and Guidelines of the Medical Physics and Health Physics Program

The General Exam assesses the student's ability to (1) formulate a research plan, (2) clearly present the rationale, goals, and methods of the proposed research plan, and (3) engage in meaningful scientific discussion regarding the merits of the proposed research plan.

The examination consists of a 2-hour meeting between the student and the general exam committee. In the first hour, the student orally presents his or her research proposal; this shall be formatted as a 40–45-minute presentation (including descriptions of the

background, significance, and research design), followed by questions and answers regarding the proposed project. The proposal presentation is open to other Program students and departmental faculty, contingent upon the consent of the examinee and the Chair of the Exam Committee. After a brief recess in which non-committee member are excused from the room, the committee continues to examine the student on the proposed project and other physics of relevance to the project; because of its rigorous nature, this oral examination is expected to last for approximately 1 hour. After the examination period has ended, the student is excused, and the committee privately deliberates the student's performance and determines the outcome of the exam: "Pass" or "Fail". The committee may recommend or require revisions to the research proposal, including the research plan. Upon conclusion of the private deliberation, the committee chair informs the student of the outcome. Individual committee members may optionally provide comments at that time.

The student is expected to demonstrate the following qualities during the General Examination:

- Clear presentation skills
- Clear communications skills
- Sound scientific judgment
- A firm understanding of core and applied medical physics principles
- Proficiency in open discussion of the research plan
- General knowledge of the proposed field of study
- General knowledge of the clinical relevance of the proposed field of study

Additional recommendations

- The student should work closely with his or her major professor on all matters pertaining to the General Exam. Frequent communication with him or her is essential.
- The LSU Program Coordinator will assist students with administrative matters (paperwork, reservation of room, parking for off-site faculty, etc.), in coordination with the MBPCC Program Coordinator (Susan Hammond). All paperwork must be routed through the Program Coordinator. The Program Director and Deputy Program Director, as well as the Department Graduate Advisor, are also available for consultation.
- On matters of procedure, the Program Coordinator, Program Director, Deputy Program Director, and Department Graduate Advisor can provide the most accurate information. Students should not rely on advice or information from other students.
- The "Doctoral Degree Audit and Request for General Examination" form [2] is available online from the LSU Graduate School. This form, which establishes the exam committee roster and schedules the exam data, must be routed through the Program Coordinator. The form must be submitted to the Graduate School via the Med Phys program coordinator at least 3 weeks prior to the planned exam date. Allow at least one business day for the department to submit the form to the graduate school.
- The General Exam should be completed around the end of the student's second year in the Program, approximately 1 year after the Qualifying Exam. For additional information regarding timing, see the Appendix entitled "Thesis Guidelines, Degree of MS in Medical Physics and Health Physics Dissertation Guidelines, Degree of PhD in Physics (Medical Physics)" in the Program's Student Manual.
- For recommendations about the format of the written proposal, see the Appendix entitled "Thesis Guidelines, Degree of MS in Medical Physics and Health Physics Dissertation Guidelines, Degree of PhD in Physics (Medical Physics)"

- Within one week after the General Exam, the Chair of the Exam Committee provides the following documentation to the LSU Program Director and Program Coordinator:
  - An Exam Report (using the form entitled "Report of Supervisory Committee Meeting", provided in the Program's Student Manual),
  - A copy of the written proposal that was reviewed by the Exam Committee
  - A copy of the student's presentation given at the Exam, and
  - The Exam Committee Chair may provide copies of the Exam Report to the
  - student and the members of the Exam Committee.

References

[1] https://www.lsu.edu/graduateschool/current_students/steps-to-graduation.php (accessed 08 Aug 2022)
(accessed 13 Aug 18).
[2] https://www.lsu.edu/graduateschool/forms.php#grad-student-forms (accessed 08 Aug 2022)
[3] http://www.lsu.edu/physics/graduate-programs/physics-astronomy/guide.php (accessed 08 Aug 2022)

5. Dissertation Overview

The Ph.D. dissertation is a required component of the Ph.D. in Physics (Medical Physics) within the Department of Physics and Astronomy. A dissertation must fulfill Program, Department, and University requirements.

Program Expectations

The dissertation shall be the result of hypothesis-driven research in the area of medical physics (therapy, imaging, or health) or health physics, according to the branch of the program declared by the student.

In the spring of 1991, a task force of the Council of Graduate Schools issued the following statement on the role of the dissertation and dissertation research:

The doctoral dissertation should (1) reveal the student's ability to analyze, interpret, and synthesize information; (2) demonstrate the student's knowledge of the literature relating to the project or at least acknowledge prior scholarship on which the dissertation is built; (3) describe the methods and procedures used; (4) present results in a sequential and logical manner; and (5) display the student's ability to discuss fully and coherently the meaning of the results. In the sciences, the work must be described in sufficient detail to permit an independent investigator to replicate the results. The dissertation is the beginning of one's scholarly work, not its culmination. Dissertation research should provide students with hands-on, directed experience in the primary research methods of the discipline, and should prepare students for the type of research/scholarship that will be expected of them after they receive the Ph.D. degree (Excerpt from A Policy Statement: The Role and Nature of the Doctoral Dissertation).

The *expectation* of the Program is that the dissertation research will be published in an appropriate peer-reviewed scientific journal. For the PhD dissertation, it is a departmental *degree requirement* that a major part of the results of the dissertation research must have been accepted for publication in an appropriate refereed professional journal. Examples of

appropriate peer-reviewed scientific journals: Medical Physics; Physics in Medicine and Biology; Journal of Applied Clinical Medical Physics; International Journal of Radiation Oncology, Biology Physics; Radiation Research; Health Physics; J. of Magnetic Resonance Imaging, IEEE TMI, etc.

Much additional guidance is in section II.3 on the MS thesis. Many of the requirements and options are similar or identical. In particular, see the text on the European-style dissertation. Obviously, the scope and length of the dissertation are typically larger than those of an MS thesis. In this style, PhD students include 3-5 peer reviewed papers they have written in the dissertation. Regarding the length of a PhD dissertation, students should write concisely so that their complete thesis is approximately 90 to 100 pages in length. Additional material may be published in internal reports or, if absolutely essential, in appendices of the dissertation. For theses over100 pages in length, students should anticipate that their major professor and supervisory committee members will require extra time to read thesis drafts. Plan to provide one extra day for each page in excess of 100 pages. This applies to each review cycle.

Additional information on dissertation requirements can be found at the graduate school web site.

Faculty Supervision

Each student is required to have an approved Supervisory Committee. (Details of the composition of the Supervisory Committee are outlined below.) The Supervisory Committee is charged with:

1. assisting the student in developing a research project that is approved by the Program,
2. mentoring the student in completing his or her research,
3. mentoring the student's writing of the thesis research, and
4. evaluating the student's research via the written thesis and public defense.

The student should meet regularly with his or her supervisor, and meetings with the Supervisory Committee should occur as needed, not to exceed 6 months between meetings. Scheduling meetings is the responsibility of the student.

Ph.D. Dissertation Project Approval

Each student shall develop a proposal for their thesis research project. The research proposal details the student's research plan, academic status and plan, and demonstrates the student's knowledge of various aspects of the proposed field of research. Specifically, the areas of knowledge include competence in physics, familiarity with literature, and rudimentary skills in written scientific communication.

Proposals are written by the student under the supervision of the student's principal research advisor, or advisor. Once the advisor is satisfied that the proposal is reasonably mature, the student submits the written proposal to the student's advisory committee. The student also orally presents the proposal to the advisory committee, who typically provide constructive criticism and other feedback that is helpful in finalizing the project proposal. Typically, the revisions required by the advisory committee are reviewed and approved within a few weeks. The advisory committee members indicate their approval by signing the cover page of the proposal. After approval by all committee members, the student submits the proposal to the Program Director for his approval and for program record keeping purposes.

A mature draft of a student's proposal is typically submitted to the supervisory committee by February 1 of the spring semester of 2nd year of study. After a period not less than 3 weeks (i.e., sufficient time to allow the committee members to read the proposal), the student presents the research proposal and seeks advice and approval from the committee. Depending on the scope of any revisions that may be required by the committee, final proposals are typically approved within several weeks. In all cases, all required approvals should be obtained before the end of the Spring semester of the student's second year.

The research thesis proposal typically should contain the following components

1.) "Introduction" (1 page limit)
2.) "Specific Aims" (1 page)
3.) "Research Strategy" (6 pages)
4.) "Bibliography and References" (no explicit limit, but be judicious)
5.) "Facilities & Other Resources" and "Equipment" (no explicit limit). Note that a template document is available that lists the program facilities and resources. Normally only minor modifications are needed to suit a particular project proposal.
6.) "Other Research Training Plan Sections" (no explicit limit). This is optional and should only be included if needed.
7.) "Biosketch" of student in NIH format (2 pages)
8.) "Appendix" (no explicit limit). This is optional and should only be used if needed.

Additional guidance on writing research proposals is provided in MEDP 7995 (Seminar) and/or by the NIH instructions for application for an F-31 predoctoral fellowship.

Regarding the format of the proposal, a font size of 11 points or larger. Use standard paper size (8 ½" x 11). Use at least one-half inch margins (top, bottom, left, and right) for all pages. No information should appear in the margins. Additional resources and tips of relevance to proposals are at http://grants.nih.gov/grants/writing_application.htm.

The same basic proposal components are recommended for both MS and PhD research projects. However, a doctoral research proposal is typically larger in scope and complexity than an MS research project. These differences are easily accommodated within the common framework for proposals. It is underscored that there is no explicit minimum requirement on the overall length of the proposal. The requirements specify the maximum number of pages allowed. These page limits are intended to guide the student on the relative proportions of the various components and to limit the overall size of the proposal.

The preparation of a research proposal is an important part of the students' education and training. Student must work closely with their principal research advisor throughout this process. In addition, the student will receive valuable advice from his or her supervisory committee. Numerous additional resources are available to the student, including formal instruction in writing a proposal (MEDP-7995 Seminar), online materials, writer's workshops, online electronic library resources, etc.

Dissertation Distribution

The student will provide electronic copies of the thesis to the Department, Program, all members of the Supervisory Committee. The thesis shall comply with University, Department, and Program guidelines. The

Journal Publication

It is expected that the student submits a paper based on the PhD research project for publication in an appropriate peer-reviewed scientific journal prior to graduation. For the PhD program, it is a departmental *degree requirement* that a major part of the results of the dissertation research must have been accepted for publication in an appropriate refereed professional journal. This effort is beneficial in that it (1) contributes knowledge to the scientific field, (2) provides documented approval and widespread availability of the student's efforts, and (3) meets expectations and provides necessary support to the faculty members for their academic development and ability to acquire and successfully complete externally funded research, which supports the students, as well as faculty research efforts.

Student resources

1.) LSU Writing Center: https://www.lsu.edu/academicaffairs/cxc/ (accessed 08 Aug 2022)

References

[1] http://www.campep.org/GraduateStandards.pdf (accessed 08 Aug 2022)
[2] http://www.lsu.edu/physics/graduate-programs/physics-astronomy/guide.php (accessed 08 Aug 2022)
[3] http://appl101.lsu.edu/booklet2.nsf/mainframeset (accessed 08 Aug 2022)

6. Final Exam and Defense

The Medical Physics and Health Physics Program faculty recommends that all Final Exams / Dissertation Defenses be conducted in a consistent fashion for all candidates and committees. The membership of the exam committee must follow current policies of the LSU Graduate School, the Dept. of Physics & Astronomy, and the Medical Physics and Health Physics Program.

We suggest the following format and content for the Final Exam and PhD Dissertation Defense:

- The Exam / Defense should comprise a public research presentation by the candidate followed by a private examination between the candidate and the committee.
- The research presentation will typically be around 45 minutes in length, with an additional 15 minutes for questions by the public audience.
- The research presentation should provide a coherent overview of the candidate's dissertation research, including review of background and motivations, aims, research methods, key results and outcomes, interpretation and conclusions, and future directions.
- The length of the private examination is determined by the candidate's committee.
- The private examination typically will focus on the candidate's research, although the committee may pursue other relevant lines of inquiry about core knowledge and specialized topics as deemed appropriate.
- All committee members must have an opportunity to ask questions of the candidate, either during the public presentation or in the private examination.

- With the concurrence of the committee members, the committee chair can invite non-committee faculty with relevant interests or expertise to observe the private exam. Observers do not have input into the outcome of the examination.

Following the defense, we encourage the candidate to follow up with committee members regarding questions asked, recommendations for edits to the dissertation, etc.

All PhD defenses must be held at LSU.

7. Typical Academic Plan

The following plan is typical of a student pursuing a Ph.D. degree in Physics (Medical Physics). Students may petition for courses taken previously at other institutions to be waived. Core courses are denoted by (*).

Year 1

Fall Semester

Hrs.	Course Number and Name
(3)	MEDP-4331* Radiation Protection and Exposure Evaluation
(2)	MEDP-4351* Radiation Detection and Instrumentation
(1)	MEDP-4352* Radiation Detection Laboratory
(3)	MEDP-7537* Radiation Interactions and Transport
(1)	MEDP-7995* Medical Physics and Health Physics Seminar

Spring Semester

Hrs.	Course Number and Name
(3)	MEDP-4111* Introduction to Medical Imaging
(3)	MEDP-7121* Radiobiology
(3)	MEDP-7530* Radiation Shielding
(3)	MEDP-7331* Radiation Therapy Physics
(1)	MEDP-7995* Medical Physics and Health Physics Seminar

Summer Semester

Hrs.	Course Number and Name
(3)	KIN-2500 Human Anatomy (or MEDP replacement course)
(3)	MEDP-7098 Radiation Physics Research Methods

COMPLETE WRITTEN QUALIFYING EXAM

Year 2

Fall Semester

Hrs.	Course Number and Name
(3)	MEDP-7111* Advanced Medical Imaging Physics
(3)	MEDP-7270 Advanced Radiation Therapy Physics
(1)	MEDP-7995 Medical Physics and Health Physics Seminar
(2)	PHYS-9000 Dissertation Research

Spring Semester

Hrs.	Course Number and Name
(6)	PHYS-9000 Dissertation Research
(3)	MEDP-7538 or other elective

Summer Semester

Hrs.	Course Number and Name
(6)	PHYS-9000

COMPLETE ORAL GENERAL EXAM (if matched to major professor during 2nd year)

Year 3

Fall Semester

Hrs.	Course Number and Name
(6)	Phys 9000 Dissertation Research
(3)	Phys 7411 Computational Physics or other elective

Spring Semester

Hrs.	Course Number and Name
(6)	Phys 9000 Dissertation Research
(3)	Phys 7412 Computational Physics or other elective

Summer Semester

Hrs.	Course Number and Name
(6)	Phys 9000 Dissertation Research

Year 4

Fall Semester

Hrs.	Course Number and Name
(9)	Phys 9000 Dissertation Research

Spring Semester

Hrs.	Course Number and Name
(9)	Phys 9000 Dissertation Research

Summer Semester

Hrs.	Course Number and Name
(6)	Phys 9000 Dissertation Research

Year 5

Fall Semester

Hrs.	Course Number and Name
(4)	MEDP-7260* Clinical Radiation Therapy Rotation
(6)	Phys 9000 Dissertation Research

Spring Semester

Hrs.	Course Number and Name
(9)	Phys 9000 Dissertation Research

COMPLETE FINAL EXAMINATION / ORAL DISSERTATION DEFENSE

8. Timeline to Completion

To guide the students and faculty, the Program has the following expectations regarding completion of the student's dissertation.

Year 1, Semester 02: Introduction to Faculty Research
Year 1, Semester 03: Training in Research Methods

Year 2, Semester 04: Part-time Research Effort

Year 2, Semester 05: Formation of Supervisory Committee
Completion of PhD Dissertation Research Plan
Year 2, Semester 06: Full-time Research Effort

Year 3, Semester 07: Part-time Research Effort
Year 3, Semester 08: Part-time research effort
Year 3, Semester 09: Full-time research effort
Year 4, Semester 10: Full-time research effort
Year 4, Semester 11: Full-time research effort
Year 4, Semester 12: Full-time research effort
Year 5, Semester 13: Completion of PhD dissertation, defense, and paper submission
Year 5, Semester 14: Completion of outstanding requisites for graduation

C. Post-Doctoral Certificate Program

1. Program Goal and Objectives

This document describes the policies and procedures of the LSU/MBPCC Post-Doctoral Certificate Program for use by faculty, staff, and trainees.

The goal of the Post-Doctoral Certificate Program in Medical Physics is to prepare trainees for acceptance into a CAMPEP accredited Medical Physics Residency. In particular, the Certificate Program is designed for trainees whose doctoral degree was not conferred in medical physics. Thus, the Certificate Program aims to equip the trainee with sufficient theoretical and practical background knowledge in medical physics to excel in a CAMPEP accredited residency program and a career in medical physics.

Our Certificate Program comprises six classroom courses covering radiation physics, radiation protection, radiobiology, radiation oncology physics, medical imaging, and anatomy/physiology. The program follows the recommendations of AAPM Report 197S (2011), entitled “The Essential Medical Physics Didactic Elements for Physicists Entering the Profession through an Alternative Pathway”.

2. Curriculum

The required courses for completing the Certificate Program are summarized in Table 1, including course number, title, and semester when taught. All courses are part of the existing curriculum for the CAMPEP-accredited MS and PhD degrees at LSU. The course work represents 18 credit hours and can be completed in as little as two regular semesters (Fall and Spring). Completion of the Certificate Program is documented by a memo from the instructor of each course together with a summary letter from the Program Director. The completion memo for each course documents the grade received (or equivalent grade for non-registered participation).

Two tracks are available for trainees in the Certificate Program:

1.) The Standard track will be utilized by post-doctoral fellows who are currently employed by faculty in the medical physics program, or on a case-by-case basis in the

LSU physics department or other departments at LSU. Typically, our post-doctoral fellowships last two years with fellows attending the courses outlined in Report 197S as part of their professional development. Fellows in the Standard track will take the 6 courses from Table 1 on a schedule developed by the fellow and the post-doctoral advisor, typically 1 course per semester to ensure that they are able to meet their commitments in research and other areas. The schedule of coursework must be approved by the Program Director prior to enrollment in the first course.

Post-doctoral fellows on this track are responsible for tuition, fees or other expenses, if imposed by LSU; note that LSU waives tuition for LSU employees in some circumstances. A post-doctoral fellow may be allowed to informally sit in courses with the agreement of the course instructor and the Program Director. The fellow must complete all course requirements (e.g., homework assignments, exams, etc.) to receive a completion memo for the course, regardless of the method of enrollment (i.e., formally registered or informally participating).

2.) In the Accelerated track, trainees will typically take three courses per semester, which allows completion of all required coursework in two regular semesters. Accelerated track participants complete the 6 courses from Table 1: MEDP-4331, MEDP-7537, and KIN-2500 in the Fall semester, followed by MEDP-4111, MEDP-7121, and MEDP-7331 in the Spring semester. The schedule of coursework must be approved by the Program Director prior to enrollment in the first course. Accelerated track participants must formally resister for each course; they are responsible for any tuition and fees imposed by LSU, textbooks, supplies, and related educational expenses.

Table 1. Required courses for the Certificate Program. Each course is 3 credit hours.

Topic	Number	Title	Semester
Imaging physics	MEDP-4111	Introduction to Medical Imaging	Spring
Radiation protection and safety	MEDP-4331	Radiation Protection & Exposure Evaluation	Fall
Radiobiology	MEDP-7121	Radiobiology	Spring
Radiation therapy physics	MEDP-7331	Radiation Therapy Physics	Spring
Radiological physics & dosimetry	MEDP-7537	Radiation Interactions and Transport	Fall
Anatomy and physiology	KIN-2500	Human Anatomy (or MEDP replacement course)	Any

3. Eligibility

To be eligible to begin the Certificate Program, candidates must hold a PhD degree in physics, engineering or similar science or technical field. Participants must also have previously satisfied the required undergraduate background as set forth by the American Board of Radiology for eligibility to sit for the Part I of the ABR certification exam in medical physics.

Participants in the Accelerated track must meet any additional enrollment requirements set forth by the LSU Graduate School for non-matriculating students. Because of the intensive nature of the coursework, applicants must be fluent in the English language. Foreign applicants for whom English is not their native language must meet any English language requirements imposed by LSU. Any deficiencies in eligibility must be remediated prior to beginning the Certificate Program.

Applicants to the Standard track must have received an offer of employment from a

member of the faculty prior to entering the Certificate Program, or already be employed as a post-doctoral fellow at LSU or MBPCC. For Standard track applicants, any deficiencies in eligibility should be remediated on a schedule determined with the postdoctoral supervisor.

4. Application

Application materials should be submitted electronically to the Certificate Program at pamedphys@lsu.edu. Applications received by the Certificate Program Application Deadline will be evaluated within three months of this deadline, resulting in an admission decision for the subsequent Fall semester. This process is coincident with the application/admission cycle the MEDP graduate degree programs. The date of this Deadline varies slightly each year, but typically is occurs in January; see the program website or contact the Program Director for the exact date.

In addition, applications to the Standard Track may also be considered for admission to the Spring or Summer semesters. Standard Track Applications may be submitted at any time during the academic year. To gain admission to the Summer or Fall semesters, the application must be received by the Certificate Program Application Deadline (see above). To gain admission to the Spring Semester, the application must be received by Program Office within 30 days of the end of the preceding Fall semester.

Applications for admission to the Accelerated Track will only be considered for admission in the Fall semester. Applicants and faculty mentors should be cognizant of the lead time associated with the admissions process and make plans accordingly.

An application must include the following items in order to be considered complete.

1.) A cover letter from the applicant to the Program Director stating the applicants desired track (standard or accelerated), the names and contact information for all letter writers (in case letters are missing), and the requested semester of admission.

2.) Official transcripts from all graduate and undergraduate universities attended. Transcripts provided in any language other than English must be accompanied by a English language translation prepared by a certified translator.

3.) Copies of all undergraduate and graduate diplomas.

4.) An up-to-date copy of applicant's academic *Curriculum Vitae*.

5.) Applicant's statement of purpose including a summary of academic and professional background and goals. This should be approximately one page in length.

6.) A proposed course of study, comprising a semester-by-semester listing of all required courses to be taken, clearly identifying any deviations from the six required courses (also see item 7 below). For Standard Track applicants, the academic plan should be jointly developed by the applicant and prospective faculty mentor. It should be signed and dated by both. A sample academic plan is provided for reference later in this section.

7.) If an applicant wishes to receive credit for courses taken elsewhere, the applicant may request credit for up to but not more than two courses or 6 credits from coursework taken elsewhere. For each course for which transfer credits are desired, the applicant must clearly identify the previously taken courses (course name, number, university, date of completion, and final grade). The applicant must also justify the transfer of credit based on consideration of equivalence the topics covered at LSU and the other

institution. This justification may be provided in tabular or narrative form. In addition, relevant course syllabi and course descriptions should be attached from both LSU and the other institution.

8.) Not less than two and not more than four letters of recommendation.

a. Letters must be sent by the writers directly to pamedphys@lsu.edu.
b. All letters must include a reasonably detailed assessment of the applicant's abilities and their potential to successfully complete the program. It is desirable to have an assessment of the applicant's suitability to enter the profession of medical physics.
c. The letters of support must pertain to admission to the LSU Post-Doctoral Certificate Training Program. For Standard Track applications, it should be noted that letters of support that only pertain to employment as a post-doctoral fellow are not acceptable. However, letters containing recommendations pertaining to employment and the Certificate Application are acceptable.
d. One letter from must be from the PhD advisor and include an assessment of the applicant's abilities and potential for successfully completing the LSU Certificate Program and becoming a medical physicist.
e. For Standard Track applicants, one letter must be from the proposed LSU mentor. It must state a commitment to mentor the applicant for the duration of course of study. The mentor's funding plan to support the salary of the applicant for the duration of the course of study must also be described.
f. If an applicant applies before completing their PhD degree requirements, the letter of recommendation from the student's PhD Advisor must include an estimated date of completion of all degree requirements.

9.) TOEFL scores for speakers of English as a 2nd language. The requirement may be waived for applicants who have completed a graduate degree at an accredited university in the United States.

10.) Most recent GRE scores (taken within the last 6 years).

Application materials should be sent by the applicant as a single package, excluding official transcripts and letters of recommendation, which are sent directly by the relevant university official or letter writer. Applications will only be evaluated by the Admissions Committee after they are complete.

All reference letters should come from former instructors, advisors or employers with sufficient first-hand experience to assess the applicant's qualifications and prospects for success in the Certificate Program. Letters should be on official letterhead and sent directly from the recommender to the Program at pamedphys@lsu.edu. TOEFL scores are generally required for non-native English speakers and must meet LSU's requirements for graduate admission.

Course credit may be awarded for courses taken elsewhere. If an applicant has taken a course that is equivalent to a Certificate Program course, the applicant may include a written request for credit along with supporting documents. Courses completed at other CAMPEP-accredited institutions will qualify with proof of completion of the course. However, in some cases the topical content of any given course varies from one university to the next, careful attention should be paid to documenting equivalence of at the level of each major topic covered in a required LSU course. For coursework from non-CAMPEP-

accredited institutions, a course syllabus must be provided submitted. Requests for transfer credits are only considered prior to admission. The responsibility to provide evidence of equivalence lies solely with the applicant.

All prospective certificate program applicants are encouraged to contact the Program Director as soon as they become interested in the Certificate Program. Similarly, prospective faculty mentors are similarly encouraged to contact the Program Director.

In cases of trainees wishing to enter the Standard Track, the prospective faculty mentor is responsible to fairly and accurately explain the issues pertaining to the separate and distinct processes of gaining employment and gaining admission. Specifically, the prospective faculty mentor must explain that employment as a post-doctoral fellow does not guarantee admission to the Certificate Program. Furthermore, the prospective faculty member must explain that admission decisions are made by an Admissions committee, not by any individual faculty member.

For example, Certificate Program admission does not promise employment as a post-doctoral fellow.

The typical sequence of events leading to admission for the Standard Track is:

1.) Search and offer by Medical Physics faculty mentor.
2.) Offer of employment received by postdoctoral fellow.
3.) Certificate program application is received and evaluated by Program admissions committee.
4.) Admission decision letter received by postdoctoral fellow.
5.) Program receives letter of acceptance of employment and of admission to the Certificate Program.

The typical sequence of events leading to admission to the Accelerated Track is:

1.) Solicited or unsolicited application evaluated by Program admissions committee.
2.) Offer of admission made to applicant.
3.) Program receives letter of acceptance of admission to the Certificate Program.

5. Admissions

Applications will be screened by an Admissions committee. The admissions committee is comprised of the Program Director, the Deputy Program Director (LSU), the Associate Director of Academic Medical Physics (MBP), and 2 additional members to be appointed annually by the Program Director.

Complete application packages will be scored and ranked based on the materials contained in the application. The major steps in the process of evaluation of applications are:

1.) Incomplete applications will be returned to the applicant without review.
2.) Complete applications will be circulated to the committee for review. The committee will hold a confidential vote, with each member voting either For, Against, or Abstain.
3.) Applicants are deemed eligible for admission upon a simple majority of “For” votes

4.) If the number of applicants exceeds available resources for admission, applicants will be ranked by the committee to determine admission priority. Standard track applicants will typically be prioritized over Accelerated track applicants.

Applicants will be informed of their admission status in writing. Candidates who receive offers of admission will have two weeks to accept or decline the offer of admission. All admissions are contingent on the availability of open positions, the availability of faculty mentors and instructors, and at the discretion of the Admissions Committee.

Failure to begin in the semester of admission may require the applicant to reapply. Requests for deferment may be granted only in extraordinary circumstances.

6. Advisor

For trainees on the Standard Track, the postdoctoral fellow's supervisor serves as advisor for the Certificate Program. For trainees on the Accelerated Track, the Program Director may designate a Medical Physics faculty member to serve as the trainee's advisor.

7. Academic Plans

Before the beginning of each semester, an up-to-date academic plan must be approved by the faculty advisor and Program Director. It is the trainee's responsibility to prepare the plan in consultation with the faculty advisor. The plan lists all course taken (and grades received), in progress, and planned.

Typical Academic Plan: Standard Track

Timeline	Course Num.	Course Name
Fall Semester year 1:	MEDP-7537	Radiation Protection & Exposure Evaluation
Spring Semester year 1:	MEDP-7121	Radiobiology
Fall Semester year 2:	MEDP-4331	Radiation Protection & Exposure Evaluation
Spring Semester 2 year:	MEDP-4111	Introduction to Medical Imaging
Fall Semester 3 year:	KIN-2500	Human Anatomy (or medp replacement)
Spring Semester 3 year:	MEDP-7331	Radiation Therapy Physics

Typical Academic Plan: Accelerated Track

Timeline	Course Num.	Course Name
Fall Semester	MEDP-4331	Radiation Protection & Exposure Evaluation
Fall Semester	MEDP-7537	Radiation Interactions and Transport
Fall Semester	KIN-2500	Human Anatomy
Spring Semester	MEDP-4111	Introduction to Medical Imaging
Spring Semester	MEDP-7121	Radiobiology
Spring Semester	MEDP-7331	Radiation Therapy Physics

Deviation from the prepared academic plan must be approved in advance by the faculty advisor and Program Director.

8. Course Descriptions

Course descriptions are available from the LSU General Catalog (http://www.lsu.edu/academics/catalogs.php). Recent course syllabi can be obtained from the instructors, or by request from the Medical Physics Program office

III. Graduate Assistantships

A. Funding

It is the goal of the Medical Physics and Health Physics Program to provide student funding through graduate assistantships for a period of up to 2 years and 2 semesters while the graduate student is enrolled full-time in the M.S. in Medical Physics and Health Physics Program.

Graduate Assistants (GAs) provide support for the teaching and research programs of the Department of Physics and Astronomy. The duties of a GA require approximately 20 hours of work per week during the regular semester, and if the appointment extends through the summer the appropriate corresponding amount due to condensed summer schedule or depending on research funding). Minimum qualifications for a GA are:

(1) a bachelor's degree in Physics or equivalent technical degree
(2) good academic standing in pursuit of an advanced technical degree

Stipend amounts vary with the type of service performed, the degree program in which the student is enrolled, and other factors. Approximate typical annual stipend rates are listed in the table below (data listed are current as of fall 2022).

Training Program	**Service Assistantship**	**Teaching Assistantship**	**Research Assistantship**
MS	Generally, not applicable	$17,600/y	$17,600/y *
PhD	Generally, not applicable	$26,000/y	$26,000/y*

* RA stipends may vary, depending on the source of funding, research duties, and other factors.

B. Assistantship Descriptions

1. YEAR 1

SERVICE ASSISTANTSHIPS

Service Assistantships are assigned to students who have not received "Certification of Proficiency in Spoken English for Faculty/ Teaching Assistants" by the Graduate School (Act 756 of the Louisiana Legislature – LSU Policy Statement 81). SA duties generally include:

a) grade homework and exams for assigned courses and maintain written records of all grades earned by students in consultation with the course instructor
b) proctor for tests, including mid-term and final exams, which may be given at various times and locations about the campus
c) participate in the consulting of students, when necessary, outside regular classroom hours
d) provide support for lecture setup and demonstrations
e) attend all meetings and training sessions scheduled by the supervisor

TEACHING ASSISTANTSHIPS

Teaching Assistants (TAs) are required to teach 1 or 2 laboratory courses under the supervision of a faculty laboratory supervisor. TA duties generally include:

a) prepare and present a brief lecture/ review to introduce each laboratory procedure
b) supervise students in performance of procedures to ensure safety, completeness, and accuracy of results
c) grade laboratory reports and mid-term and final exams
d) attend meetings scheduled by the supervisor
e) render 1 to 2 hours per week tutoring/ consulting students

2. YEAR 2 (Fall and Spring Semesters)
TEACHING ASSISTANTSHIPS

In the fall of the second year, Teaching Assistants in the Medical Physics Program are expected to spend 20 hours per week training and participating in clinical medical physics activities under the supervision of a qualified medical physicist at MBPCC. During the Spring semester, Teaching Assistants may assist the Program Director in developing instructional materials or perform teaching duties, similar to those described above for the first year of study.

3. YEAR 2 (Summer Semester) and YEAR 3 (Fall and Spring Semesters)

RESEARCH ASSISTANTSHIPS

Research Assistants (RAs) in the Program are expected to perform thesis research under the supervision of their faculty supervisor. Funding for RAs is the primary responsibility of the student's faculty supervisor.

C. Tuition and Fees

Graduate assistantship appointments (20 hours) receive a full in-state tuition exemption and, if applicable, an out-of-state tuition waiver. Students are responsible for paying student fees. To qualify for a nonresident and/or tuition exemption, students must be employed on an assistantship on or before the following dates: March 1st for spring, July 1st for summer, and October 1st for fall.

A recent example schedule of tuition and fees is listed in the table below. Check https://www.lsu.edu/bgtplan/Tuition-Fees/fee-schedules.php for the most up-to-date information.

Fall 2021 Semester Fees

Graduate Students

	Tuition	Dedicated Fees	Academic Excellence Fee	Technology Fee	Building Use Fee	Operational Fee	Student Excellence Fee	**Resident Total**	Nonresident Fee	**Nonresident Total**
Full Time (9 or more hours):										
15 hours	$4,748.30	$657.70	$245	$75	$48	$80	$857	**$6,711**	$8,479	**$15,190**
14 hours	$4,690.30	$657.70	$245	$70	$48	$80	$857	**$6,648**	$8,475	**$15,123**
13 hours	$4,631.30	$657.70	$245	$65	$48	$80	$857	**$6,584**	$8,471	**$15,055**
12 hours	$4,572.30	$657.70	$245	$60	$48	$80	$857	**$6,520**	$8,469	**$14,989**
11 hours	$4,505.30	$657.70	$235	$55	$48	$80	$857	**$6,438**	$8,465	**$14,903**
10 hours	$4,437.30	$657.70	$225	$50	$48	$80	$857	**$6,355**	$8,462	**$14,817**
9 hours	$4,370.30	$657.70	$215	$45	$48	$80	$857	**$6,273**	$8,461	**$14,734**
Part-Time:										
8 hours	$3,122	$154	$191	$40	$43	$52	$762	**$4,364**	$5,206	**$9,570**
7 hours	$2,976	$136	$167	$35	$37	$50	$667	**$4,068**	$5,199	**$9,267**
6 hours	$1,987	$118	$143	$30	$32	$32	$571	**$2,913**	$3,621	**$6,534**
5 hours	$1,841	$100	$119	$25	$27	$30	$476	**$2,618**	$3,614	**$6,232**
4 hours	$1,703	$82	$96	$20	$21	$29	$381	**$2,332**	$3,607	**$5,939**
3 hours	$1,074	$64	$72	$15	$16	$18	$286	**$1,545**	$802	**$2,347**
2 hours	$928	$46	$48	$10	$11	$16	$190	**$1,249**	$796	**$2,045**
1 hour	$786	$28	$24	$5	$5	$14	$95	**$957**	$786	**$1,743**

NOTE: The LSU Board of Supervisors may modify tuition and/or fees at any time without advance notice.

Professional Program Fees: Students enrolled in the Digital Media Arts & Engineering (DMAE) and the full-time MBA programs will be assessed a program fee in addition to the tuition and fees above. These fees will be prorated based on the number of hours enrolled. For example, a student registered for 9 hours in these programs will be assessed the following: DMAE program $2,500; MBA program $2,730.

D. Student Work Hour Guidelines

Students are expected to be in their assigned workspace during assigned working hours (9:00 AM to 5:00 PM unless otherwise specified). Exceptions to this are made for attending classes, performing TA duties, lunch break, medical reasons, and approved leave (see section on leave elsewhere in this handbook).

Experience reveals that students must devote a large and sustained effort to the timely completion of their degree requirements. Typically, successful graduate students devote on average 60 h/week and utilize good time management skills.

E. Student Health Insurance Plan

The program does not provide a student health insurance plan or assistance navigating health insurance issues. Students are responsible for their own health care insurance.

F. Additional Information

Additional information on graduate assistantships is available online from the Graduate School and in LSU Policy Statements.

IV. Course Schedules and Calendars

The section lists many of the program courses that are offered regularly. Course offerings may vary slightly, depending on availability of faculty, student interest, and other factors. The information in this section is intended to facilitate advance planning of courses of studies only, coordination of TA duties, etc.

A. Fall

MEDICAL PHYSICS

AVL	ENRL CNT	COURSE ABBR	NUM	TYPE	SEC NUM	COURSE TITLE	HR CR	TIME BEGIN-END	DAYS MTWTFS	ROOM	BUILDING	SPECIAL ENROLLMENT	INSTRUCTOR
2	13	MEDP	4331		1	RAD PROT & EXPOS EVA	3.0	1030-1120	M W F	0118	NUCLEAR SCIENCE		WANG W
1	14	MEDP	4351		1	RAD DET & INSTRUM	2.0	930-1020	M W	0262	NICHOLSON		MATTHEWS K
(F)	7	MEDP	4352	LAB	1	RAD DETECTION LAB	1.0	130-0420	W	0004	NICHOLSON		MATTHEWS K
(F)	6	MEDP	4352	LAB	2	RAD DETECTION LAB	1.0	430-0720N	W				MATTHEWS K
8	2	MEDP	4995	SEM	1	SEMINAR	1.0	1230-0120	F				NEWHAUSER W
	***	MEDP 7111	***			COURSE TAUGHT AT THE MARY BIRD PERKINS CANCER CENTER							
20	5	MEDP	7111		1	ADV MED IMAGING PHYS	3.0	1130-1250	M W	0108	NICHOLSON		DEY J
	***	MEDP 7260	***			COURSE TAUGHT AT THE MARY BIRD PERKINS CANCER CENTER							
16	9	MEDP	7260	CLI	1	CLIN MED PHYS ROTAT	4.0	TBA					SOLIS D
	***	MEDP 7270	***			COURSE TAUGHT AT THE MARY BIRD PERKINS CANCER CENTER							
20	5	MEDP	7270		1	ADV RAD THER PHYSICS	3.0	1130-1250	T TH	0108	NICHOLSON		FONTENOT J
	***	MEDP 7537	***			CROSS-LISTED WITH PHYS 7537							
16	9	MEDP	7537		2	RAD INTERACT/TRNSPRT	3.0	1130-1220	M W F	0127	COATES		ZHANG R
(H)		MEDP	7992	RES	1	ADV TOP NS & ENGR	1-3	930-1020	M W F				
11	14	MEDP	7995	SEM	1	SEMINAR	1.0	1230-0120	F	0262	NICHOLSON		NEWHAUSER W
14	1	MEDP	8000	RES	1	THESIS RESEARCH	1-12	TBA				PERMIS OF DEPT	PITCHER G
14	1	MEDP	8000	RES	2	THESIS RESEARCH	1-12	TBA				PERMIS OF DEPT	FONTENOT J
15		MEDP	8000	RES	3	THESIS RESEARCH	1-12	TBA				PERMIS OF DEPT	MATTHEWS K
10		MEDP	8000	RES	4	THESIS RESEARCH	1-12	TBA				PERMIS OF DEPT	CHANCELLOR J
12	3	MEDP	8000	RES	5	THESIS RESEARCH	1-12	TBA				PERMIS OF DEPT	DEY J

Fall 2022 MEDICAL PHYSICS

1. Course Numbers and Full Course Names

MEDP-4331, Radiation Protection & Exposure Evaluation
MEDP-4351, Radiation Detection & Instrumentation
MEDP-4352, Medical Physics & Health Physics Lab
MEDP-7111, Advanced Medical Imaging Physics
MEDP-7260, Clinical Radiation Therapy Rotation
MEDP-7270, Advanced Radiation Therapy Physics
MEDP-7537, Radiation Interactions & Transport
MEDP-7995 (Also MEDP-4995), Medical Physics & Health Physics Seminar

Notes: Dates and times for MEDP 7260 will be announced by the course director. End times may vary slightly. Enrollment is typically capped at 9 students, with priority given to those graduating soonest. Course director will provide clarification as needed.

B. Spring

1. Course Numbers and Full Course Names

MEDP-4111, Introduction to Medical Imaging
MEDP-7530, Radiation Shielding
MEDP-7121 Radiobiology
MEDP-7210, Clinical Principles of Radiation Therapy
MEDP-7331, Radiation Therapy Physics
MEDP-7995 (also 4995), Medical Physics & Health Physics Seminar
NS- 4111, Fundamental of Nuclear Science
NS-4352*, Environmental Radiation Evaluation and Remediation
NS-4570*, Nuclear Facility Safety

Table below is from Spring 2022 and may change in Spring 2023.

Time	Monday	Tuesday	Wednesday	Thursday	Friday
TBD		NS 4111		NS 4111	
8:30-9:20	MEDP-7121		MEDP-7121		MEDP-7121
9:30-10:20	MEDP 4111		MEDP 4111		MEDP 4111
10:30-11:20	MEDP 7530		MEDP 7530		MEDP 7530
12:30-1:20					MEDP 7995
1:00-5:00	MEDP 7210 (Days Vary)	MEDP 7210 (Days Vary)	MEDP 7210 (Days Vary)	MEDP 7210 (Days Vary)	MEDP 7210 (Days Vary)
4:00-5:20	MEDP 7331		MEDP 7331		
7:00-10:00		NS-4570			

*NS-4352 and NS-4570 will be taught alternately in even and odd years.

C. Summer

1. Course Numbers and Full Course Names

MEDP-7098, Radiation Research Technology and Methods
Anatomy and Physiology (details to be announced)

D. LSU Academic Calendar

Below is a copy of the academic calendar. The official and most up-to-date Academic Calendar is located at: https://www.lsu.edu/registra/academics/academic-calendar.php.

Fall Semester 2022

Date	Deadline	Event
August 12		New International Graduate Student Orientation
August 15 - 18		New International Undergraduate & Exchange Student Orientation
TBD		Welcome Week
August 22		Classes Begin
August 30	4:30pm	Final date for dropping courses without receiving a grade of a "W"
August 31	4:30pm	Final date for adding courses for credit and making section changes Final date to petition deans' offices to invoke the Grade Exclusion Policy
September 5		Labor Day Holiday
October 13 - 14		Fall Holiday
October 18	9:00am	Mid-semester grades due
October 23		Course scheduling for spring semester and summer term begins at 5:00pm
November 4	4:30pm	Final date for dropping courses Final date for resigning from the University Final date to request rescheduling a final examination when three examinations are scheduled in 24 hours
November 23 - 25		Thanksgiving Holiday begins at **12:30pm** on **November 23**
November 30 - December 4		Graded coursework (including but not limited to tests, exams, quizzes) is not permitted during concentrated study period. Exceptions to this policy include: laboratory courses; graduate and professional courses; presentations, papers and projects identified on the syllabus on the first day of class; and participation. During this time, no extracurricular student activities, such as social and athletic events, will be held on or off campus.
December 3		Last Day of Classes
December 5 - 10		Final Examinations
December 13	9:00am	Final grades due (degree candidate)
December 14	9:00am	Final grades due (non-degree candidate)
December 16		Commencement Day

Spring Semester 2023

Date	Deadline	Event
TBD		Welcome Week
January 16		Martin Luther King Day Holiday
January 17		Classes Begin
January 25	4:30pm	Final date for dropping courses without receiving a grade of a "W"
January 26	4:30pm	Final date for adding courses for credit and making section changes Final date to petition deans' offices to invoke the Grade Exclusion Policy
February 20 - 22		Mardi Gras Holiday. Classes resume at **12:30pm** on **February 22**
March 13 - 17		Spring Break
March 14	9:00am	Mid-semester grades due
March 26		Course scheduling for fall semester and wintersession begins at 5:00pm *Tentative*
April 6	4:30pm	Final date for dropping courses Final date for resigning from the University Final date to request rescheduling a final examination when three examinations are scheduled in 24 hours
April 7		Good Friday Holiday
May 3 - 7		Graded coursework (including but not limited to tests, exams, quizzes) is not permitted during concentrated study period. Exceptions to this policy include: laboratory courses; graduate and professional courses; presentations, papers and projects identified on the syllabus on the first day of class; and participation. During this time, no extracurricular student activities, such as social and athletic events, will be held on or off campus.
May 6		Last Day of Classes
May 8 - 13		Final Examinations
May 16	9:00am	Final grades due (degree candidate)
May 17	9:00am	Final grades due (non-degree candidate)
May 19 - 20		Commencement will be held over a two-day period
		42 MWF Classes; 29 TTh Classes

First Summer (Session B)

Date	Deadline	Event
May 22		Classes Begin
May 24	4:30pm	Final date for dropping courses without receiving a grade of a "W"
May 26	4:30pm	Final date for adding courses for credit and making section changes Final date to petition deans' offices to invoke the Grade Exclusion Policy
May 29		Memorial Day - No classes held
June 7	9:00am	Mid-semester grades due
June 13	4:30pm	Final date for dropping courses Final date for resigning from the University
June 19		Juneteenth - No classes held
June 24 & 26		Final classes and final examinations held
June 27	9:00am	Final grades due
August 11		Commencement Day
		24 Classes

Second Summer (Session C)

Date	Deadline	Event
July 3		Classes Begin
July 4		4th of July Holiday
July 6	4:30pm	Final date for dropping courses without receiving a grade of a "W"
July 7	4:30pm	Final date for adding courses for credit and making section changes Final date to petition deans' offices to invoke the Grade Exclusion Policy
July 20	9:00am	Mid-semester grades due
July 26	4:30pm	Final date for dropping courses Final date for resigning from the University
August 5 & 7		Final classes and final examinations held
August 8	9:00am	Final grades due
August 11		Commencement Day
		25 Classes

E. LSU Final Exam Schedule

Students and course directors are strongly advised to discuss and their final examination schedules. This helps to ensure they are free from scheduling conflicts with exams from other courses and program-related activities. Examination schedules for this academic year are available at

https://www.lsu.edu/registrar/academics/fall-final-exams.php
https://www.lsu.edu/registrar/academics/spring-final-exams.php

v. Policies and Procedures

A. Safety and Security

1. LSU EMERGENCY TEXT MESSAGE SYSTEM (Instructions to sign-up)

- Log into myLSU.
- Select "Campus Community" in the left navigation bar.
- Select "Emergency Test Message" from the drop-down menu.
- The users will be required to input their cellular service provider and cell phone number, and to choose a unique password which must be different than your myLSU password.

2. BUILDING

- Doors should be closed and locked when a room is unoccupied for any length of time.
- Keys are assigned to the student by Ms. Carol Duran at the front desk of main office (202 Nicholson Hall). It is the student's responsibility to safeguard their keys. All keys must be returned to the Department Main Office when the student leaves the Program. Keys to the LSU student offices should be returned when students are assigned office space elsewhere (typically at the end of the summer of the first year).
- If you encounter any maintenance problems (plumbing, lighting, etc.) after hours or during the weekend, report the matter to Facility Services (8-3186).
- If you see someone in the building whom you don't believe belongs, notify Program faculty or staff, Department faculty or staff, or Campus Police (8-3231).

3. PERSONAL

- Do not leave valuables unattended/unsecured.
- Respect the privacy of other students' desks.
- Campus provides bus service on campus and to some off-campus areas; bus routes and schedules are available on the website for LSU's Parking, Traffic and Transportation Office.
- Jitney Service is available to students needing on-campus transportation during afterhours to their vehicle or to another campus building. Jitney Service can be reached by calling 8-5000.

4. RADIATION SAFETY

- Radiation safety orientation will be provided at the beginning of the academic year.

- In case of a radiation accident or spill, secure the area and notify the Radiation Safety Office (8-2008).
- Radiation and radioactive materials shall not be used or transported without the supervision of a faculty member and approval of the Radiation Safety Officer.

IMPORTANT PHONE NUMBERS (Area Code 225)

Emergency (from any phone)	**911**
LSU Police	578-3231
Facility Services	578-3186
Baton Rouge City Police	389-2000
Battered Women's Program	389-3001
Campus Information	578-3202
Crime Stoppers	344-STOP
Environmental Health & Safety	578-5640
The Phone (Personal Crisis Hotline)	924-5781
Radiation Safety	578-2008
Stop Rape Crisis Center	383-7273
Student Health Center	578-6271

A few tips for security on the fourth floor of Nicholson Hall follow.

1.) Excluding the Program Office room 439, discourage propping open the hallway doors -- especially because the hallway door is the only barrier to most student desks. All of the hallway doors are equipped with a toggle on the lock mechanism that can be used to unlock the door while still keeping it closed.

2.) The door to room 439 will likely be open during business hours when a student worker is on duty, or when Dr. Newhauser or Dr. Hogstrom are in their offices.

3.) If you leave a room and nobody else is there (or even if you are not sure if anyone else is there), lock the hallway door.

4.) Likewise, if you are sitting in an interior office with a closed door, you can keep the hallway door closed and locked.

5.) And, if you see a hallway door propped open and nobody appears to be around, please close the door. We would rather drive back to campus to unlock a door for someone than to deal with a theft or worse.

6.) If you see someone on the 4th floor that you don't recognize, act courteous and ask if you can help them find where they are going or whom they wish to see.

B. Record Keeping

The program, department, and other units at LSU are required to keep students records for a variety of purposes, including monitoring progress, reporting, and analysis. When submitting records, students should always submit records through the medical physics program office. Specifically, copies should be submitted to the LSU MEDP Program Coordinators. In cases where records must be submitted directly to another unit, such as the graduate school, copies should be provided to the MEDP program office.

Please submit your records electronically whenever possible; use paper in exceptional situations only.

When submitting scanned electronic copies of records, please observe the following instructions;

1.) Scanned records should be provided only in PDF format.
2.) Name files appropriately, *e.g.*, "2020-10-13-leave-request-form-jones-v01.pdf".
3.) For multipage records, concatenate all pages into a single file. Smartphones have handy features to do this trivially (see for example the Notes application if you have an Apple smart phone).
4.) When submitting electronic records by email, include as recipients the following three addresses. This facilitates prompt processing, even when one or more staff are on leave or otherwise unavailable.
    a. The LSU Program Manager, Paige Whittington (pwhittington@lsu.edu)
    b. The program's office email office (pamedphys@lsu.edu).

C. Code of Student Conduct

Disciplinary procedures for students who exhibit severe breaches of conduct can result in the students' separation from the University or in other disciplinary action, as outlined in the Code of Student Conduct. Students charged with violations of conduct listed in the Code of Student Conduct are provided a due process administrative hearing with the Program Director, Graduate School Dean or a hearing before a panel of the Committee on Student Conduct composed of faculty members, students, and administrators. Please take a few minutes to read the full version of the LSU Code of Student Conduct which is located at https://www.lsu.edu/saa/students/codeofconduct.php**.**

Definitions of academic misconduct: "Academic Misconduct" includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, and any act designed to give an unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructors, providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment), or the attempt to commit such an act. Other specific examples of academic misconduct include:

1.) Copying from another student's test paper or assignment;
2.) Allowing another student to copy from a test paper or assignment;
3.) Using during a quiz/test, the course textbook or other materials such as a notebook normally brought to a class meeting but not authorized for use during a quiz/test by the person giving the quiz/test. Having such forbidden material open and in sight of the student will be considered prima facie evidence of use;

4.) Failing to thoroughly follow requirements related to the preparation and presentation of work, including group projects, submitted for credit in a manner that results in submitting as one's own the work of another or misleading an instructor as to the condition under which the work was prepared;
5.) Collaborating during a test or any other assignment with any other person by giving, receiving or otherwise sharing information without prior approval of the instructor. Speaking to another person without the consent of the person proctoring the exam may be considered prima facie evidence of collaboration;
6.) Using specially prepared materials (e.g., notes, formula lists, and notes written on student's clothing or body) during a test. Bringing such forbidden material to a test will be considered prima facie evidence of use or attempted use;
7.) Stealing, buying, or otherwise obtaining through unauthorized access, all or part, including answers, of an unadministered test;
8.) Seeing or giving away all or part of an unadministered test, including answers to an unadministered test;
9.) Bribing any other person to obtain an unadministered test or information about an unadministered test;
10.) Substituting for another student, or permitting any other person to substitute for oneself, to take a test;
11.) Submitting as one's own, in fulfillment of academic requirements, any work (such as, but not limited to, a theme, report, term paper, essay, computer software, other written work, painting, drawing, sculpture, or other scholastic artwork) prepared totally or in part by another;
12.) Selling, giving, or otherwise supplying to another student for use in fulfilling academic requirements any theme, report, term paper, essay, computer software, other written work, painting, drawing, sculpture, or other scholastic art work;
13.) Entering a building or office for the purpose of changing a grade in a grade book/computer, on a test paper, or on other work for which a grade is given;
14.) Changing, altering, or being an accessory to changing and/or altering a grade in a grade book/computer, on a test paper, on other work for which a grade is given, on a "drop slip," or on any other academic record of the University;
15.) Entering into an arrangement with an instructor to receive a grade of "F" or any other reduced grade in a course, on a test, or any other assigned work in lieu of being charged with academic misconduct under the Code of Student Conduct;
16.) Committing Plagiarism. "Plagiarism" is defined as the unacknowledged inclusion of someone else's words, structure, ideas, or data. When a student submits work as his/her own that includes the words, structure, ideas, or data of others, the source of this information must be acknowledged through complete, accurate, and specific references, and, if verbatim statements are included, through quotation marks as well. Failure to identify any source (including interviews, surveys, etc.), published in any medium (including on the internet) or unpublished, from which words, structure, ideas, or data have been taken, constitutes plagiarism;
17.) Violating any applicable professional code of ethics or conduct while enrolled in a course of study designed to qualify the student for certification in a profession or while in the course or scope or any required practicum or clinical experience;

18.) Attempting to commit or assisting someone in the commission or attempted commission of an offense listed above.

D. Core Tenets of Graduate Training

Students should read and understand the following core tenets of graduate training. The program encourages each student and his/her their major professor (research supervisor) to review and discuss these tenets.

1. LSU Commitment

The mission of the LSU Medical and Health Physics Program is to train students in the effective and safe use of radiation in the medical, industrial, and academic fields. LSU is committed to maintaining the highest standards of training and education, and to providing a program for the graduate student to learn to function independently as scientific professionals in a variety of settings. The Office of Academic Affairs provides oversight for terms of appointment, grievance procedures, and other matters relevant to the support of its graduate students.

2. Quality Training

Individuals should be trained to independently formulate meaningful hypotheses, design and conduct interpretable experiments, adhere to good laboratory practices, analyze results critically, understand the broad significance of their research findings, and uphold the highest ethical standards in research. The development of additional skills—including oral and written communication, grant writing, and laboratory management—are considered integral to this training.

3. Importance of Mentoring

Effective mentoring is critical for graduate education and requires that the primary mentor dedicate time to ensure personal and professional development. A good mentor builds a relationship with the student that is characterized by mutual respect and understanding. Attributes of a good mentor include being approachable, available, and willing to share his/her knowledge, listening effectively, providing encouragement and constructive criticism, and offering expertise and guidance.

E. Student Office Policies

1. Student Desks

Students are provided a desk or appropriate workspace during their time as a student in the Program. First-year students are typically assigned spacein the Medical Physics Lab, 460 Nicholson Hall.

Second-year students in the Medical Physics area of concentration will have their primary desk at Mary Bird Perkins Cancer Center during their Fall and Spring clinical rotations. They should also be provided a desk or work surface by their supervisory professor

so as to be able to conduct research in his or her research area. Subsequently, all students will be provided a desk or work surface by their supervisory professor so as to be able to continue and complete his or her thesis or dissertation research.

Second-year students in the Health Physics area of concentration will be provided a desk or work surface by their supervisory professor so as to be able to conduct research in his or her research area through completion of the thesis or dissertation.

Students will keep their work surfaces clean and will not display images offensive to others. Audio may only be played through earphones that will not subject adjacent students to your sound.

2. Utilization of Program Supplies

The Program Office maintains an a supply of 8 1/2" x 11" paper for the copier in Room 459 and for the printer in Room 460. If you should notice the supply is getting low, please inform the Program Office. Limited standard office supplies are available for the asking in the Program Office. If your research project requires special supplies or scientific products, you should coordinate your request for purchase of such with the Program Office.

3. Copy Machines (LSU)

You should have been provided a copy code from the Physics Office for your TA duties. Please adhere to the copy limits established by the Department.

4. Phone Utilization (LSU)

ON-CAMPUS CALLS: To call another number on campus ("578" or "334") dial the last five digits of the listed number. For example, to dial 578-2261 from a campus telephone, dial "8-2261."

OFF-CAMPUS CALLS: To make a local, off-campus call, dial "9" and the seven-digit number. You can make personal long-distance calls only through an "800" service to which you personally subscribe. If you need to make a business-related long-distance call, please come to the Program Office for assistance.

CAMPUS DIRECTORY ASSISTANCE: To call directory assistance on campus, dial 8-3202. Campus directory assistance is available weekdays, 8 a.m.-5 p.m.

F. Scheduling Committee Meetings, Candidacy Examinations, and Defenses

Trainees benefit from the participation of faculty on their advisory and examination committees. Committee members generously share their time and expertise. Trainees are responsible for organizing their various committee meetings, with consultation with their major professor or mentor. To ensure that meetings of a student and faculty committees occur smoothly, please observe the following guidelines.

1.) Allow sufficient lead time when scheduling committee events. Short lead times seem to cause relatively more problems, e.g., postponements, than longer lead times. The lead time obviously varies with the event so good judgment is needed.

2.) When scheduling the committee events

   c. For the initial contact, send out at least three possible options, including the date, time, and location for each option. Confusion about location is apparently somewhat of an issue. Therefore, specifying location early on should help to eliminate confusion in that regard. For members who will be traveling to the meeting from far away or teleconferencing in, be sure to specify the time zone (CST) and, as a courtesy, be sure to provide the corresponding local time at the remote committee member's location.
   d. Inform the committee members that their participation is essential and that there is a strong preference for local committee members to be physically present at the meeting.
   e. Specify if teleconferencing or videoconferencing will be available (e.g., "for committee members who are not on campus or who have special circumstances, teleconferencing is available upon request."). Typically, we offer this for members who are not in town at the time of the meeting.

3.) Send reminders by email to committee members and their administrative assistants.

   a. One calendar week prior to the event
   b. One business day prior to the event
   c. Include the date, time, location, and offer to provide a map upon request (or just provide it).
   d. Put the committee member and the administrative assistant's addresses in the "To:" field, i.e., don't use the cc field for either. Some people who are awash in email naturally tend to skip over email on which they are only copied, thus increasing the chance f
   e. or a breakdown in communication.

4.) If teleconferencing or videoconferencing is planned,

   a. Be sure to provide the dial in number or other teleconferencing connection information well in advance of the schedule event. For first time users, plan on at least a week. For seasoned users, one business day is enough.
   b. Do a dry run the week before the committee event (videoconferencing only). The experience with videoconferencing has been largely disappointing and I would recommend avoiding this until the video conferencing systems work reliably. In the meanwhile, teleconferencing seems to work very well.
   c. Get to the event room at least 30 min early to make sure the video/teleconferencing equipment is present and working. If videoconferencing, you will probably need to have an AV tech present. Sometimes they just don't show up so be prepared to call in for support.
   d. Send PDF version of the slides out to the remote participants at least 48 hours prior to the event. Note that PPT files are commonly too large to make it through some email systems. Send slides even if videoconferencing is planned; the slides provide a contingency solution to unexpected video problems. One day prior to the event confirm that that the recipient is able to view the slides.

Make sure that each slide is numbered so the remote participant can stay in sync with the speaker during the presentation.

5.) The student is responsible for the logistics of his/her meeting, exam, defense, etc. With the consent and at the discretion of the student's supervisor, assistance may be available from the supervisor's administrative support staff. If provided, this assistance should be used judiciously.

G. Student Leave Policy

1. Purpose

Being a graduate student in the Program is a full-time obligation. Students are expected to be on site (or at their assigned workplace, which may include working from home or elsewhere for a few students) during the hours of 9:00 AM to 5:00 PM Monday through Friday, year-round, unless other arrangements are made with Department Leadership, the Program Director, or the student's Supervisor. Students on graduate assistantships are governed by LSU Policy Statement, PS-21 (https://www.lsu.edu/policies/ps/ps_21.pdf). The policy here is meant to be consistent with that and other LSU policies and procedures.

Each student is expected to handle herself or himself in a professional manner, and this includes responsibility for time away from LSU, referred to as "leave." Hence, each student is expected to comply with the leave guidelines below.

It is important to the Program and faculty, particularly your supervisor, to know when and where you are, when on LSU or MBPCC premises. All sick, vacation, travel, and other leave should be communicated in advance, if known. If not, it should be communicated as soon as feasible. If you have a faculty Supervisor, he or she should be contacted. If your primary office is at LSU, please inform the Program Administrative Coordinator (578-2163 or email pamedphys@lsu.edu). If your primary office is at Mary Bird Perkins Cancer Center, please inform the Physics Administrative Assistant (215-1266). Students are responsible for any missed classes due to leave. In accordance with PS-22 "a student who finds it necessary to miss class assumes responsibility for making up examinations, obtaining lecture notes, and otherwise compensating for what may have been missed." Please consult PS-22 for more details (https://sites01.lsu.edu/wp/policiesprocedures/policies-procedures/22/).

Fill out a form (blank forms are located in the appendix of this handbook) for all leave. Submit the form to the program coordinator at LSU or MBPCC. When filling out the form, under "Section" fill in "MEDP" and the name of your advisor. If you have been matched to a major professor who is supervising your research, use that name. Otherwise, indicate "Program Director". For the type of leave, you will typically check "Annual" or "Sick" leave (we rarely use the other kinds). Be sure to enter the number of hours of leave you are requesting, using the following method of accounting. For each full workday you will be on leave, that counts as 8 hours of leave. Do not include weekends or LSU holidays. Typically, you will round partial days of leave to zero, half, or a full day of leave.

2. Sick Leave

Students that are not on premises during scheduled hours due to health reasons will be on sick leave.

3. Holiday Leave

Holiday leave days are those days specified as holidays for students, faculty, and staff by LSU. The holidays are listed in Section IV of this handbook and at the LSU website containing the academic calendar.

4. Annual (Vacation) Leave

Graduate students are allowed 3 weeks of vacation leave annually, so long as it does not interfere with the duties of any graduate assistantship, fellowship, or academic learning. Prior to vacation, there should be approval from the Program Director (1st year students) or your supervisor (2nd higher year students). Approval should be documented by Program forms; records of your leave will be maintained by the Program Office. Leave not taken during the allocated academic year can be carried forward only with Program Director approval.

5. Travel Leave

Travel leave occurs whenever the student travels to a laboratory, healthcare facility, or scientific meeting, or professional meeting on official LSU business. In such cases travel must be approved by the student's supervisor (if applicable) and the Program Director prior to the travel. All travel and reimbursement for travel will follow LSU policies and procedures. All travel should be coordinated through the Program Manager, so as to assure compliance.

Other Leave

Other valid leave can be serious family emergency, special curricular requirements such as judging trips or field trips, court-imposed legal obligations such as subpoenas or jury duty, military obligations, serious weather conditions, and religious holidays.

H. Mandatory Non-Academic Training

1. LSU Training

In order to remain knowledgeable about important policies and procedures, and to stay in compliance to state and federal regulations, all LSU employees are required to complete the following mandatory training e-courses. Course descriptions and instructions for registration are outlined below. The courses are:

- Cybersecurity Awareness Training (required upon employment only)
- The Louisiana Code of Governmental Ethics
- Power-based Violence Prevention & Response
- Digital Resource and Content Accessibility Awareness

See the following link for details.
https://www.lsu.edu/hrm/employees/employee_resources/training_and_development/mandatory_training.php

2. MBPCC Training

Students go through orientation process when they transition over to Mary Bird Perkins Cancer Center (MBPCC) at the end of their first year. At the orientation process they view the following HIPPA videos provided by Human Resources. These videos are administered by the Physics Academic Assistant.

1. Safety Orientation for Healthcare "Preparation Meets Opportunity"
2. Successful Service Recovery Encounters – Making it Right in Healthcare
3. Privacy, Security and You: Protecting Patient Confidentiality Under HIPPA

As part of the clinical rotations course, students may view a prostate procedure. In order to be allowed into the Operating Room they must complete the required Aseptic Training conducted by OLOL. The Physics Administrative Assistant coordinates the training. The course coordinator will inform students if the course will include activities requiring aseptic training.

Angela Stam, Radiation Safety Director at MBP, conduct the radiation safety training with the students within the first two weeks of the start of the summer semester. If there is a conflict with the class schedules, the training will be conducted at the beginning of the fall semester.

Students undergo health assessment testing as required by MBP which consists of a TB test and drug screen. If the student has received a current TB test, they will just need to provide a copy of their immunization records. Physics Administrative Assistant coordinates with the health center. The student will be required to set up the appointment once the necessary paperwork is provided.

I. Travel Policies

1. Driving Authorization

If you drive your personal vehicle for Program/Department-related business, then you must have a driving authorization on file with the Physics Department (part of LSU's insurance regulations). This includes both LSU faculty and MBP adjunct faculty, as well as all graduate students. Examples of driving on Program/Department-related business include:

- Faculty or students traveling between LSU and MBP for class, research, etc.
- Faculty transporting students between LSU and MBP for class, research, etc.
- Students transporting other students between LSU and MBP for class, research, etc.
- Faculty or students transporting visitors (e.g., to airport, LSU, MBP, etc.)
- Faculty or students driving personal vehicles to conferences or meetings at other sites (e.g., grad students driving to interview in Shreveport; driving to SWAAPM meeting)

The driving authorization must be renewed annually. A form is available online. The driving authorization also includes the requirement of completing an online defensive driving course once every 3 years; the State of Louisiana online course is at https://www.lsu.edu/riskmgt/vehicleuse/lsuam_vehicleuseprocedures.php

Many insurance companies will provide you with a discount on your car insurance if you provide the defensive driving course certificate to them.

2. Other

LSU uses a business enterprise software platform called Workday. This platform is used for many different things including Travel. It is where we create Spend Authorizations, before a trip and then Expense Reports, after a trip. For additional details regarding travel, contact the Physics Department staff in Room 202 Nicholson. They can assist with conference registration, booking flights and hotel reservations.

J. Professional Society Memberships

All first-year program students are encouraged to join professional societies pertaining to their program of study and research interests. There are several benefits to joining, including scholarships, travel awards for conferences, and access to scientific journals. Additionally, being a member of a professional society such as those listed below is an appropriate item to put on a CV, and this will appeal to future employers. Students are responsible for paying their own memberships dues.

1. American Association of Physicists in Medicine (AAPM)

Membership Type: Student Membership
Annual Dues: $44 with an in initial $25 application fee. Dues waived for 1st year.
Benefits of Membership:

- Access to *Medical Physics* online journal archives
- Discounted rates on multiple physics publication subscriptions and offerings, including *Physics in Medicine and Biology*
- Reduced registration fees and financial assistance for society meetings

http://www.aapm.org/memb/prospect/studentapp.asp

2. American Nuclear Society (ANS)

Membership Type: Student Membership Annual Dues: $30
Benefits of Membership:

- Subscription to *Nuclear News* and *ANS News*
- Discounted rates on ANS publication subscriptions and offerings
- Free membership in two specialty divisions. Extra divisions cost $10 each.
- Scholarship opportunities
- Financial assistance for conferences

http://www.ans.org/join/

3. Health Physics Society (HPS)

Membership Type: Student Membership
Annual Dues: 1st year free. $40 renewal. Section memberships $5 per section.
Benefits of Membership:

- Scholarship opportunities

- Access to *Health Physics* and *Operational Radiation Safety* online archives
- Opportunities for participation in professional committees
- Reduced registration fees and financial assistance for society meetings

https://hps.org/join/

4. Radiation Research Society (RRS)

Membership Type: Scholar-In-Training Program (Junior SIT)
Annual Dues: $25
Benefits of Membership:

- Financial support for meetings and career development
- Networking with investigators from different professional backgrounds
- Opportunities for research and further education in all areas of radiation research

https://radres.site-ym.com/general/register_member_type.asp?

5. American College of Radiology

The American College of Radiology provides free member-in-training memberships.
https://shop.acr.org/ACRMembership/ACRVerifyEligibility.aspx

K. Registering for Research and Other Non-didactic Courses

Special procedures are required for registering for selected research and other non-didactic courses. The courses for which the special procedures apply are summarized in the following table.

Course	Who May Enroll	Purpose
MEDP-7991 Advanced Projects in Medical Physics and Health Physics	MS and PhD students	Directed study
MEDP-7992 Advanced Topics in Medical Physics and Health Physics	MS and PhD students	Directed study
MEDP-7999 Report Investigation	MS and PhD students	Directed investigation or design project
MEDP-8000 Thesis Research	MS students only	Thesis Research
PHYS-9000 Dissertation Research	PhD students only	Dissertation Research

The special registration procedures are described in the remainder of this section. Example forms are provided. However, the forms change frequently, and the examples given may become obsolete during the academic year.

MEDP-7991, 7992, 7999:

1.) Student identifies an instructor willing to take on the responsibility.
2.) Student contact the Associate Departmental Chair (Dr. Dana Browne) with the request (browne@phys.lsu.edu). It would be best to give as much advance notice as possible.
3.) Instructor completes a departmental syllabus (see forms on following pages), including project description, number of credit hours with expected time commitment, written/oral report requirements, and grading basis.
4.) The instructor and student must sign and date the form.
5.) The course section will then be added to the schedule, and the student will be enrolled in the course by Department staff.

MEDP-8000 and PHYS-9000:

1.) Student obtains a permission form (see recent example form on following pages) from the Graduate Administrative Coordinator.
2.) Student fills out the form.
3.) Instructor (major professor) signs the form and sends it to the Graduate Administrative Coordinator.
4.) Graduate Administrative Coordinator enroll the student into the appropriate section for that instructor.

SYLLABUS for MEDP 7991 Advanced Projects in Medical Physics and Health Physics Department of Physics and Astronomy LOUISIANA STATE UNIVERSITY	
Course Description:	MEDP 7991 Advanced Projects In Medical Physics and Health Physics provides an opportunity for individual study for graduate students under the direction of a faculty member. Advanced treatment of a specific area of medical physics or health physics technology of current interest. *The Department's expectation is that through a combination of reading, laboratory work and/or theoretical calculations that a student gain knowledge of an advanced area of medical physics and/or health physics. The course will provide an independent study experience that will enhance student learning and student preparation for advanced training (e.g., graduate school) or employment.*
Academic Credit:	As a general guide, each credit hour is earned for three clock hours of independent study per week during a regular semester (summer A session, 1 credit hr = 6 clock hrs/wk). Credit in MEDP 7991 can be earned even if the student receives monetary compensation for the same research activity, as per department policy. This course is variable credit (1-3 hours) and can be repeated for up to a total of 6 hours of credit.
Registration:	Prior to registering for the course, the student should obtain approval from the faculty member who will supervise them. A student enrolls in MEDP 7991 by filling out the information below in consultation with the faculty member. The form must be signed and dated by the faculty member and a copy provided to the Associate Chair for approval before the student can register.
Description of Project: *Briefly describe the independent study activity the student will perform. Expectations regarding time commitment, specific tasks or projects, frequency of meetings, lab notebooks, written reports, etc. should be clearly set forth. . Faculty expectations regarding grades (A,B,C...) and student performance should be clearly outlined.*	
Academic Credit Hours:	Please indicate how many credit hours the student will earn. (max. 6)
Name of Student	
Signature of Student/Date	
Name of Faculty Member	
Signature of Faculty/Date	
Syllabus for 7991 (rev. 6/2/2008)	

SYLLABUS for MEDP 7992 Advanced Projects in Medical Physics and Health Physics Department of Physics and Astronomy LOUISIANA STATE UNIVERSITY	
Course Description:	MEDP 7992 Advanced Topics In Medical Physics and Health Physics provides an opportunity for individual study for graduate students under the direction of a faculty member. Advanced treatment of a specific area of medical physics or health physics technology of current interest. *The Department's expectation is that through a combination of reading, laboratory work and/or theoretical calculations that a student gain knowledge of an advanced area of medical physics and/or health physics. The course will provide an independent study experience that will enhance student learning and student preparation for further training or employment.*
Academic Credit:	As a general guide, each credit hour is earned for three clock hours of independent study per week during a regular semester (summer A session, 1 credit hr = 6 clock hrs/wk). Credit in MEDP 7992 can be earned even if the student receives monetary compensation for the same research activity, as per department policy. This course is variable credit (1-3 hours) and can be repeated for up to a total of 6 hours of credit.
Registration:	A student enrolls in MEDP 7992 by filling out the information below in consultation with the faculty member who will supervise them. Also attach a detailed syllabus. The form must be signed and dated by the faculty member and a copy provided to the Associate Chair for approval before the student can register.
Description of Project: *Briefly describe the independent study activity the student will perform. Expectations regarding time commitment, specific tasks or projects, frequency of meetings, lab notebooks, written reports, etc. should be clearly set forth. . Faculty expectations regarding grades (A,B,C...) and student performance should be clearly outlined.*	
Academic Credit Hours:	Please indicate how many credit hours the student will earn. (max. 3)
Name of Student	
Signature of Student/Date	
Name of Faculty Member	
Signature of Faculty/Date	
Syllabus for 7992 (rev. 6/2/2008)	

SYLLABUS MEDP-7999 REPORT INVESTIGATION (Medical Physics and Health Physics) Department of Physics and Astronomy LOUISIANA STATE UNIVERSITY	
Course Description:	MEDP 7999 Report Investigation (1-6) *Prereq.: MEDP 4111 or 7331 and consent of instructor.* May be taken for a max. of 12 sem. hrs. credit. Detailed investigation of a research problem or a technical design project.
Academic Credit:	As a general guide, each credit hour is earned for three clock hours of independent research per week during a regular semester (e.g., fall semester, 3 credit hrs = 9 clock hrs/wk). Credit in MEDP 7999 can be earned even if the student receives monetary compensation for the same research activity, as per department policy. This course is variable credit (1-6 hours) and can be repeated for up to a total of 12 hours of credit.
Registration:	Prior to registering for the course, the student should obtain approval from the faculty member responsible for the student's supervision. A student enrolls in MEDP 7999 by filling out the information below in consultation with the faculty member. Also attached a detailed syllabus. The form must be signed and dated by the student and the faculty member, and submitted to the Associate Chair for approval and processing.
Description of Project: *Briefly describe the independent study activity the student will perform. Expectations regarding time commitment, specific tasks or projects, frequency of meetings, lab notebooks, written reports, etc. should be clearly set forth. . Faculty expectations regarding grades (A,B,C...) and student performance should be clearly outlined.*	
Academic Credit Hours:	Please indicate how many credit hours the student will earn (max. 6)
Name of Student	
Signature of Student/Date	
Name of Faculty Member	
Signature of Faculty/Date	

L. Letters of Recommendations for Residency Programs

Begin this process early! Proper planning and preparation ensure that faculty members have enough time to prepare the strongest and most personalized letters possible.

When applying for residency programs, we recommend obtaining three letters of recommendation. Ideal writers are

1.) Your thesis advisor: focuses on applicant's strengths, attributes, and potential.
2.) The program director: focuses on the strength and attributes of the MS/PhD training programs.
3.) Other faculty member who can speak to strengths of particular relevance to residency and career as a clinical physicist.

Sequence of Steps

1.) First, take the time to properly prepare your entire packet. See the checklist below.
2.) Speak with your advisor to identify the best letter writers for your particular case.
3.) Contact faculty to request letters (see description of cover letter in checklist below). Your request should contain a complete packet of materials (see checklist below).

Checklist of Contents

1.) A cover letter from you to the faculty letter writer. The body of the letter should contain
    a. The names of your other letter writers. This helps writers cover your strengths and to avoid gaps in the letters when viewed in the context of the whole application.
    b. The deadline for the submission of the letter.
    c. A brief statement of your career goals.
    d. The title of research thesis or dissertation (tentative title is acceptable).
    e. Your cumulative graduate GPA in the LSU program.
    f. The date and result of any part of any board certification examination you have taken.
2.) An up-to-date CV and/or biographical sketch.
3.) An academic plan that includes your anticipated defense and degree-completion dates.
4.) Current unofficial LSU transcripts for graduate coursework.

Tips

1.) The faculty are supportive of you and your career progression. Often student's make erroneous assumptions about the LOR process. For example, a typical misconception is that the student has had too little interaction with the program director to ask for an LOR. Therefore, we strongly advise you to seek the advice of faculty and err on the side of more communication than less.
2.) Provide the packets to letter writers at least 6 weeks prior to the submission deadline.
3.) If interested in MBPCC program, contact Residency Program Director by 1 November of year prior to start of fellowship.

VI. Appendix: Facilities and Resources

A. Computers

1. High Performance Computing

One helpful computational research resource is the High-Performance Computing (HPC) center at LSU (http://www.hpc.lsu.edu/resources/hpc/index.php). The HPC offers a number of large parallel computer clusters available for use by all students. The two most widely used in our group are *Philip* and *SuperMike II*.

In order to uses these resources, you will need to sign up for an HPC account (https://accounts.hpc.lsu.edu/login_request.php). You will need a faculty sponsor to gain access to the HPC, note: the sponsor has to be a full-time faculty, adjuncts can't sponsor students for this. Once you have set up your account you will need to request allocations for the various machines.

Philip:

- Relatively small cluster
- Does **not** require an allocation
- Best used as a test bed before larger scale calculations.

SuperMike II

- Has two types of allocations: Research and Startup.
- Startup allocation is 50,000 CPU hours and is a simple one-page request for. All that is required is a brief description of the project.
- Research allocations can go up to millions of CPU hours but requires a more formal proposal and review process. Generally speaking, it is best to use a startup allocation to provide the results used as a foundation for a research allocation proposal.

In addition to gaining access to these clusters, you HPC account will also give you access to regular classes for leaning about how to use the clusters (http://www.hpc.lsu.edu/training/index.php). To access these resources, you will need software to allow remotes access through sftp and ssh clients. WinSCP (https://winscp.net/eng/index.php) and Putty (https://www.putty.org) have proven to be very useful for this purpose.

For additional help in setting up your HPC accounts, contact Dr. Carver at rcarver@marybird.com

B. Library Resources

Program students have access to the libraries of LSU, the Medical Physics Program, the Department of Physics and Astronomy, and Mary Bird Perkins Cancer Center.

1. Archive of MS Theses and PhD Dissertations

To access:

- Visit https://digitalcommons.lsu.edu/gradschool/ Select "Browse the Graduate School Collections."
- Once in the ETD library, you can browse by last name or department.

2. LSU Interlibrary Loan Programs

For books and journals not directly available, the LSU library offers an online Interlibrary Loan Internet Access Database (ILLiad) service (http://www.lib.lsu.edu/ILL/)

3. LSU Library's Online Resources

Many resources are available from the LSU libraries, including the LSU library catalog, links to journal search databases, interlibrary loan, online renewal of materials, and so forth. Links to the most common resources are available under the *Library Resources* tab in **myLSU** (https://mylsu.apps.lsu.edu/group/mycampus/).

The LSU library offers over 30,000 full text electronic journals. Examples of medical physics, radiology, and biomedical engineering journals with on-line access include:

- Acta Radiological: 1995-present
- Annals of Biomedical Engineering: 1998-present
- Annals of Nuclear Medicine: 1999-present
- Applied Radiology: 2004-present
- Australasian Radiology:1998-present
- British Journal of Radiology: 1997-present
- Clinical Radiology: 1996-present
- Computerized Medical Imaging and Graphics: 1995-present
- European Journal of Radiology: 1995-present
- European Radiology: 1997-present
- IEEE Transactions on Biomedical Engineering: 1988-present
- The Internet Journal of Radiology: 2000-present
- Journal of Applied Clinical Medical Physics: 2000-present
- Journal of Biomechanical Engineering: 2000-present
- Journal of Digital Imaging: 2001-present
- Journal of Radiation Research: 1999-present
- Nuclear Medicine and Biology: 1995-present
- Medical Engineering & Physics: 1995-present
- Medical Image Analysis: 1996-present
- Medical Radiology: 1997-present
- Physica Medica: 2005-present
- Physics in Medicine and Biology: 1956-present
- Radiation Research: 2000-present
- Radiology: 1980-present
- Radiotherapy and Oncology, Journal of European Society for Therapeutic Radiology and Oncology (Green Journal): 1995-present

- International Journal of Radiation Oncology, Biology, Physics (Red Journal): 1995-present
- Radiation Oncology: 2006-present

Access to some resources is somewhat less than obvious. Below, we summarize some tricks to access relevant literature.

To obtain the NCRP reports from the LSU Library, download *individual sections* as PDF files (for free) from Knovel through the LSU Libraries. The procedure is:

f. Start at the LSU home page, www.lsu.edu
g. Click on: Quick Links → LSU Libraries → Go
h. Click on: Resources → Databases
i. Click on: By Title → K
j. Click on: Knovel
k. (Login with your PAWS ID and password, if prompted)
l. Click on: Safety & Industrial Hygiene → Radiation
m. Search through the list for the desired report (the list is alphabetical)
n. Click on the desired report
o. Click on the desired section to open it in a browser window

LSU has an institutional subscription to the ICRP documents. This must be accessed via the LSU Libraries site for the ICRP site to recognize the subscription.

1. go to the LSU Libraries site, select Databases, select Web of Science
2. search on "ICRP 106" (or whatever title you want) -- you may want to refine the search strictly for the journal "Annals of the ICRP"
3. Browse to the entry that you want.
4. Below the summary info, if there's a little "LS" logo, click on it and it will take you to the PDF copy of the report.

To access Radiotherapy and Oncology from the LSU library,

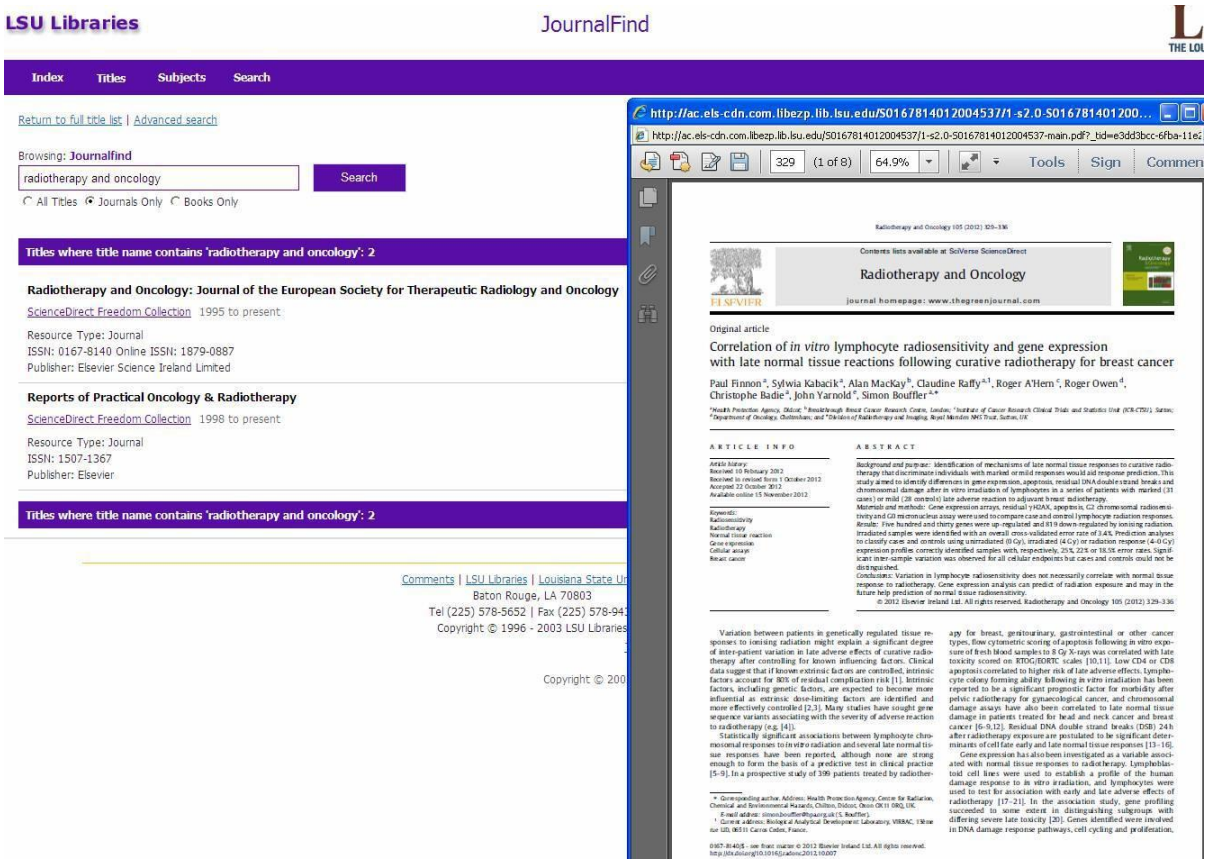
1.) Go to http://atoz.ebsco.com/Search/491
2.) Search for “Radiotherapy and Oncology” with checkbox “journals only” selected
Click on ScienceDirect Freedom link.

LSU also has institutional subscriptions to the following journals.
‘Physics in Medicine and Biology’ from vol. 1 (1956) – present.
https://lsu.louislibraries.org/uhtbin/cgisirsi/x/0/0/57/5/3?searchdata1=2627089{CKEY}&searchfield1=GENERAL^SUBJECT^GENERAL^^&user_id=WEBSERVER

‘Radiation Research’ From 1954 (vol. 1) – present
https://lsu.louislibraries.org/uhtbin/cgisirsi/x/0/0/57/5/3?searchdata1=2628898{CKEY}&searchfield1=GENERAL^SUBJECT^GENERAL^^&user_id=WEBSERVER

There are many resources available through the School of Veterinary Medicine Library, including the International Journal of Radiation Oncology, Biology, Physics:

1. Navigate to page https://lsu.edu/vetmed/library/index.php



2. Login with PAWS ID (works both on and off campus)
3. Search for journal or resource in search box

To Access Physics in Medicine and Biology

1. Direct Browser to http://lib.lsu.edu
2. Select “Databases” in the box on the top left.
3. Under “Databases by Subject” scroll and select “physics and astronomy”

4. Scroll down the list of databases and select IOPscience
5. If the MyLSU login screen appears, login with LSU username and password
6. On the IOPscience website, select “Journals list” from the “Journals” dropdown navigation bar

7. Select Physics in Medicine and Biology from the list of journals

4. LSU Medical Physics Library

Medical Physics textbooks and key medical physics journals are available in the Medical Physics Library (MPL), Room 439A Nicholson Hall. As an example, the following medical physics and radiology journals are readily available in hardcopy from the resources listed below:

- Medical Physics (MPL): 1974-present
- Physics in Medicine and Biology (MPL): 1977-present
- International Journal of Radiation Oncology, Biology, Physics (MPL): 1984-present
- Medical Dosimetry (MPL): 1991-present
- Health Physics (Sajo): 1992-present
- Operational Radiation Safety (Sajo): 1998-present
- The Journal of Nuclear Medicine (Matthews): 1994-present
- IEEE Transactions on Nuclear Science (Matthews): 1994-present
- IEEE Transactions on Medical Imaging (Matthews): 1994-present

Please do not remove materials from the library. To ensure that everyone has access to these materials, they must remain in the library. Materials may not be "checked out" for individual use. If you need long term access to certain materials, please feel free to make copies, access the materials electronically (see student handbook for details), or to purchase your own copies. Thank you for your courtesy toward others in following this policy.

Major Collections in the LSU Medical Physics Library.

Item	Volumes in Library
Program Theses and Dissertations	2004-present

Textbooks and Reference Books in the LSU Medical Physics Library.

Title	Author	Edition
Physics of Radiology	Wolbarst	
Techniques for Nuclear and Particle Physics Experiments	Leo	2nd

Title	Author	Edition
Christensen's Physics of Diagnostic Radiology	Curry et al	4th
The Essential Physics of Medical Imaging	Bushberg	2nd
Handbook of MRI Pulse Sequences	Bernstein et al	
Digital Mammography	Peitgen	
Specification, Acceptance Testing and Quality Control of Diagnostic X-Ray Equipment	Seibert et al	
Specifications, Performance Evaluations, and Quality Assurance of Radiographic and Fluoroscopic Systems in the Digital Era	Goldman et al	
Acceptance Testing of Medical Imaging Equipment	Lin et al	
The Selection and Performance of Radiologic Equipment	Hendee	
Medical CT and Ultrasound: Current Technology and Applications	Goldman et al	
Handbook of Biomedical Imaging Analysis Volume I: Segmentation Models, Part A	Suri et al	
Handbook of Biomedical Imaging Analysis Volume II: Segmentation Models, Part B	Suri et al	
Handbook of Biomedical Imaging Analysis Volume III: Registration Models	Suri et al	
Naked to the Bone: Medical Imaging in the Twentieth Century	Bettyman et al	
Physics in Nuclear Medicine	Sorensen at al	2nd
The Physics and Instrumentation of Nuclear Medicine	Sprawls	
Recent Advances in Nuclear Medicine, Vol. 5	Lawrence et al	
University Physics	Bauer et al	
MIRD Radionuclide Data and Decay Schemes	Eckerman et al	
Imaging Processes and Materials	Sturge et al	8th
MIRD Primer for Absorbed Dose Calculations	Loevinger et al	
Physical Aspects of Brachytherapy	Godden	
Non-Ionizing Radiation	Moseley	
Radiation Protection	Kathren	
Fundamentals of Radiation Dosimetry	Greening	
Radiotherapy Treatment Planning	Mould	
Medical Lasers	Carruth et al	
Thermoluminescence Dosimetry	McKinlay	
Computing Principles and Techniques	Vickery	
RPL Dosimetry	Perry	

Title	Author	Edition
Computers in Radiotherapy and Oncology	Mould	
A Primer on Theory and Operation of Linear Accelerators in Radiation Therapy	Karzmark et al	
Evaluation of Radiation Exposure from Diagnostic Radiology Examinations	U.S. Department of Health	
The Use of Iodine-125 for Interstitial Implants	U.S. Department of Health	
The Physics of Radiation Therapy	Khan	4th
Introduction to Radiological Physics and Radiation Dosimetry	Attix	
Radiation Detection and Measurement	Knoll	4th

5. MBPCC Library Resources

The MBPCC library and its holdings are located on the first-floor physics area of MBPCC.

6. Personal Subscriptions

Students have access to Medical Physics journal through their AAPM membership.
Several faculty and staff subscribe to additional journals that may be of interest. Subject to the constraints of the laws on "fair use" of copyrighted material, it is possible to request access to literature from colleagues. It is the student's responsibility to understand and comply with "fair use" rules.

1.) Medical Physics, Science, Nuclear News, Health Physics Journal (WDN)
2.) Journal of Nuclear Medicine, IEEE Transactions on Nuclear Science, IEEE Transactions on Medical Imaging (KLM)

C. Writing Resources

Tutors are now available in Studio 151, Coates Hall, to help students with their writing projects. Tutors are eager to work with writers at all stages of the writing process—from planning to organizing and developing to revising. Editors are available to work with students for whom English in not their first language. And while Studio 151 does not edit students' papers, they can help students eliminate recurring errors and teach strategies for spotting and fixing mistakes themselves.

Students should make appointments (see http://cxc.lsu.edu) well in advance of due dates. Hours are limited now so encourage students who want help to schedule early.

VII. Appendix: Forms

A. Guidance for Routing Forms For Electronic Signature and Approval For Students, Faculty, and Staff

Purpose

This document provides a quick guide to routing electronic forms for signature. Electronic routing is simple, fast, and convenient. Our program routes forms by electronic means.

Introduction

LSU provides faculty and staff with software to route forms. The software needed includes Microsoft Outlook, a web browser, Adobe Acrobat Reader DC, and Adobe Sign (a web application). All these applications are available to LSU faculty, staff, and students, except Adobe Sign, which is only available to faculty and staff. Therefore, staff will assist students in routing their documents.

The electronic forms are very convenient. Fillable versions of the forms are available from the Program Google Drive and from the Graduate School's web site. To access forms from the Program, students will need a Gmail account in order to access the Program's Google Drive. The graduate school forms are open to everyone.

To learn the entire system and route a test form should require only 10 minutes or less. Some items in the forms are pre-filled for efficiency. Instructions are detailed below.

One important parenthetical remark is necessary here. It is imperative to first READ THE INSTRUCTIONS before attempting to fill out the form. Specifically, there are two sets of instructions you must read, namely, 1) the trainee handbook (guidance on form content) and 2) this addendum to the handbook (guidance on electronic submission). After carefully reading ALL the instructions, ask for help if you are still uncertain. DO NOT GUESS. DO NOT ATTEMPT THE TRIAL-AND-ERROR METHOD. DO NOT LEAVE REQUIRED FIELDS EMPTY. Incomplete and incorrect forms waste time and cause delays.

Instructions to Students to Prepare and Submit Forms

1.) Prepare a form, another type of document, or group of documents for routing and approval. The format of the document must be PDF.

p. Download and use fillable PDF forms (unless they are not available, then see below). Download and save the blank fillable form to your local computer. Open it, fill it out, and save it to your local computer using the desktop version of Acrobat Reader DC. (Do not use a PDF viewer that is just a plug-in application in a web browser.)

i. Fillable forms from the Program are available here: https://drive.google.com/drive/folders/1xYKen472DaBkA0C2Z7FO8nCcYATLTYjM?usp=sharing

ii. Fillable graduate-school forms are available here:

https://www.lsu.edu/graduateschool/forms.php

q. Most, but not all, of the forms we use are now PDF fillable forms. In the rare case that you have a PDF document but it does not contain fillable fields, use the following procedure to fill it out using electronic annotation. In Acrobat Reader DC, select "Tools", then use the "Add text" feature to enter all data fields (except signatures, which come later).
r. If you are Mac user, you can insert your signature by creating through the preview.
s. If your document is on paper, you must scan it to a PDF file, using the scanner of your choice. One convenient and quick way to scan single or multi-page documents into a single PDF file is to use the Notes application on an iPhone. If the form was not filled out prior to scanning, fill it out using the annotating technique above.
t. Once the form is filled out, name the file with a suitably descriptive filename, *e.g.*, "leave-request-newhauser.pdf".

2.) Initiate the Routing Request

a. Email your document(s) to the LSU program office at medp@phys@lsu.edu, with carbon copy to the LSU Program manager at pwhittington@lsu.edu. In the subject line, enter a short description, *e.g.*, "Request for Routing: Final Examination Request for A. Jones". In the body of the email, include the names and email addresses of each recipient. The program office will take care of the routing.

Instructions to Staff to Route Forms

1.) Log in to Adobe Cloud at https://documentcloud.adobe.com/link/home/. Enter your LSU email address (no password needed).
2.) Enter the "Sign" app. Click on "Go to Adobe Sign" or "Request Signatures".
3.) Select "Complete in order", where the order is generally increasing hierarchical order in the approval chain. For example, on a supervisory committee request form, the student is first, followed by the committee members, committee co-chair, committee chair, and other faculty members, the major professor, and the Program Director last.
4.) Add one or more recipient's email address. Always include the Program Director.
5.) If the Program Coordinator needs to approve a form, click on "Add me".
6.) Enter the "Agreement Name", *e.g.*, "Leave Request Form for Newhauser", which will appear in the email request message.
7.) Optionally add any special instructions, *e.g.*, "Please review and sign by Friday Nov 13, 2020." that will also appear in the email request message.
8.) Drag and drop in one or more files for signature(s).
9.) Click on "Preview and add signatures"
10.) Click on "Next"
11.) Add a "signature block" to the form for the current "recipient" listed (upper right corner). Drop it wherever the signature should appear on the form.

12.) In the upper right corner, change to the next recipient, and add a signature block for that individual.

13.) Repeat step 13 until all signature blocks are present.

14.) Click on "Send".

15.) Once per day, monitor the status of all documents currently in progress to ensure the routine process is successful.

Instructions to All Recipients to Review and Sign Documents

If you are a "recipient", you will receive an email requesting your review and signature. Just follow the instructions and click on the links in the email. You will be prompted through the process. It only requires a few button clicks. No login typing is required. You should not need to install any new software (other than possibly a recent version of Acrobat).

By default, LSU email appears to filter all requests and notifications from "Sign" in the LSU Outlook system. Therefore, follow the steps below to fix that.

1.) Once a request has been made (the requester may have to contact you directly). Check your "In Box" for a request. If you don't find it, look in your "Junk E-Mail folder". By default, emails from Sign will most likely wind up in your "Junk E-mail" folder.

2.) Locate an email request from "echosign@echosign.com" in your "Junk E-mail" folder in Outlook. In the inbox the identify of the requester is displayed, *e.g.*, "Wayne Newhauser". In the email itself, you should see both, *e.g.*, "<Wayne Newhauser> echosign@echosign.com".

3.) Right click on the mail, select "Junk", and select "Never block sender's domain".

Tips, Traps, and Notes on Using Electronic Forms

1.) Add "bookmarks" in your web browser for the locations of forms (*e.g.*, MEDP Google Drive, Grad School web page with forms, and Adobe Cloud).

2.) We have received some comments that students do not have access to Adobe Acrobat Reader DC through the LSU site license. Evidently, it is free for everyone to use; see https://get2.adobe.com/reader/otherversions/.

3.) We have had limited success using PDF "add-in applications" to view and fill out forms directly from web browsers. When add-ins work, they streamline the process a bit. But so far, results are mixed. This includes the add-in from Adobe, entitled "Adobe Acrobat for Google Drive". Save yourself the time and frustration.

4.) All students (actually anyone with a link) should have read access to the directory on the Google Drive containing the fillable forms. However, students must have a Google Gmail account to access the Google Drive.

5.) Contact the Program Director and/or the Program Coordinator if you experience problems with the instructions in this addendum. Our objective is to make this quick,

easy, and robust for all concerned. Your feedback is important to us in working toward that objective.

Instructions to Staff to Manage the Routing Process

1.) Log in to Adobe Cloud at https://documentcloud.adobe.com/link/home/. Enter your LSU email address (no password needed).

2.) Enter the "Sign" application by clicking on "Go to Adobe Sign" or "Request Signatures".

3.) Click on any of the following choices, which are mostly self explanatory

a. "IN PROGRESS"
b. "WAITING FOR YOU"
c. "EVENTS AND ALERTS"

4.) If you like, you may customize the notifications, reminders, and other settings to meet your needs.

B. Medical Physics FERPA Waiver Form

The Family Educational Rights and Privacy Act (**FERPA**) is a Federal Law that protects the privacy of student education records, *including financial, academic, and/or advising records*. For the student's protection, FERPA limits release of student record information without the student's explicit written consent. A student may withdraw a waiver atany time.

The Medical Physics Graduate Program is a joint academic venture of Mary Bird Perkins Cancer Center (MBPCC) Radiation Oncology Clinic and the Louisiana State University (LSU) Department of Physics and Astronomy. LSU students enrolled in the program attend classes and do research on the MBPCC campus. Access to student records at LSU and MBPCC is essential.

This waiver serves to allow LSU Medical Physics Graduate Program student records to be transferred and/or discussed between LSU Department of Physics and Astronomy and MBPCC at will and as needed, as determined by the director of the Medical Physics Program. Institutional information listed below.

LSU Department of Physics and Astronomy
Medical Physics Program
439 Nicholson
Baton Rouge, LA 70803

Mary Bird Perkins Cancer Center
Radiation Oncology Clinic
4950 Essen Lane
Baton Rouge, LA 70809

Student Disclosure and Release of Information

Student Name *(Please Print)*_____ **LSU ID Number (Required)** _____

I understand that any and all personally identifiable information concerning my student education records is protected under FERPA. I further understand that I may waive that protection and give access of my records to individuals and/or institutions of my choice.

This release allows individuals at MBPCC to gain access to my student education records, *including financial, academic, and/or advising records* from the LSU Department of Physics and Astronomy.

Access granted to student education records via this form remains in effect until officially revoked by the student.

By signing and submitting this release, I agree to waive my rights under FERPA and allow MBPCC Radiation Oncology Clinic to receive access to my student education records. I authorize LSU Department of Physics and Astronomy to release any of my student education records to MBPCC. I understand that I can revoke this access at any time.

_____ _____
Student Signature (Required) **Date**

Revocation of the Release of Financial and/or Academic Information

I acknowledge that by signature below, I no longer waive my rights under FERPA, and I am withdrawing my permission to release any student education records, *including financial, academic, and/or advising records* to those individuals or institutions identified on this document. I further understand that if I wish to grant access to my records that a new release form will need to be completed.

_____ _____
Student Signature (Required) **Date**_____

Program Manager (225)578-2163
pamedphys@lsu.edu

Administrative Assistant (225)215-1266

Office Use Only: Received by:_____Date:_____ Form MEDP-FERPA-1,
Revised 11 Aug 2015

C. Course Schedule Form

All graduate students must turn in their semester schedule to the graduate student secretary. ***Please submit your approved schedule (Grad. Advisor or Major Professor's signature required).*** TA's: Any time periods unaccounted for will be considered "*free*" time and TA duties will be assigned accordingly.

SCHEDULE NAME: _____

SEMESTER: _____

	MONDAY	*TUESDAY*	*WEDNESDAY*	*THURSDAY*	*FRIDAY*
7:30					
8:00					
8:30					
9:00					
9:30					
10:00					
10:30					
11:00					
11:30					
12:00					
12:30					
1:00					
1:30					
2:00					
2:30					
3:00					
3:30					
4:00					
4:30					
5:00					
5:30					
6:00					
6:30					
7:00					
7:30					
8:00					
8:30					
9:00					
9:30					
10:00					

ADVISORS'S SIGNATURE: _____

Note: Submit a copy to the Medical Physics Program Coordinator.

Form MEDP-COURSREQ-1, Revised 02 Aug 2019

D. MS Supervisory Committee Membership Form

Student Name: _____

Proposed Member Name, Degree	Member's Graduate Faculty Status full, associate, affiliate, ad hoc, or non-member) *	Member's Program Faculty Status/ Department Rank (regular, adjunct, or non-member / professor, associate, or assistant professor) *	Member's Areas of Expertise (Research interests of relevance) *	Member's Major Department /Institution*	Member's Approval (initials)
1. (Major Professor and Committee Chair)					
2.					
3.					
4.					
5.					

Submit completed form to the Medical Physics Program Coordinator.

PROPOSED MS SUPERVISORY COMMITTEE MEMBERSHIP

This can be found in the directory of program of faculty.

Signature of Committee Chair: Date:

Signature of Program Director: Date:

Form MEDP-MSSUP-2, Revised 13 Aug 2020

E. Report of SupervisoryCommittee Meeting Form

Each student's Supervisory Committee should meet at least once every six months. Within one week of each meeting the Student and their Advisor (Chair of the Committee) should complete this report form, sign it, and submit it to the Medical Physics Program Coordinator, 439 Nicholson Hall, Tower Dr., Baton Rouge, LA 70803. The student should complete their section and sign the form prior to the Committee Chair completing their portion and signing the form. A copy of this report should be sent to each member of the Committee and to the student. This form is also available as an editable electronic document.

Name of student:_____Date of meeting:_____

Committee Members	Role	Present	Absent
	Committee Chair	☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

To Be Completed by the Student

1. Briefly review the research accomplishments of the student since the last meeting.

2. What specific recommendations were made by the Committee for future research?

3. What is the timetable for completion of degree requirements by the student (attach academic plan)?

Signature of Student:_____Date:

TO BE COMPLETED BY COMMITTEE CHAIR

1. In the opinion of the committee, should this student continue in the degree program? ☐ Yes ☐ No

2. Evaluate the student's research performance and intellectual development over the past six months.

Summarize the student's current strengths and weaknesses (as an independent scientific investigator).

3. Comment on the student's oral and written communication skills.

4. If there are any present weaknesses or deficiencies, how will they be remedied?

5. Is there anything about the student's performance, his/her interactions with the advisor, or the student's prospects for the completion of the degree that should be brought to the attention of the Program Director?

Signature of Committee Chair: Date:

F. Request for MS Examination and Degree Audit Form

LSU | Graduate School

Request for Master's Defense and Degree Audit

This form must be submitted to The Graduate School ***three weeks prior*** to the defense date or by current semester deadline for graduation.

Email submission to gradsvcs@lsu.edu

Name:

LSU Student ID: Department:

Degree Type (M.A., M.S.): Official Major: Official Minor:

Defense Information:

Select One: ☐ Thesis ☐ Non-Thesis

Defense Date/ Time:

Location/ Room: Thesis Title:

Note: If the title changes after the defense, please ensure the Approval Sheet reflects the new title.

Committee Members *(Print Names Below):*

Committee Chair: _____ Signature: _____

Co-Chair (if applicable): _____

Minor Professor (if applicable): _____ Signature: _____

Member: _____

Member: _____

Department Chair/Grad Advisor: _____ Signature: _____

Dean of the Graduate School: _____ Date: _____

Coursework Information:

List all relevant LSU graduate courses and hours required toward this degree only. (Ex: CHEM 7947 (3), CHEM 8000 (6), etc.)

Coursework Earned in Major Program:

Coursework Earned in Minor Program (if a formal minor has been declared):

Courses Transferred or Petitioned (list institution):

Total Hours Completed: ____

Courses Remaining:

Total Hours Remaining: ____

For Office Use Only:

GPA: REG: CW: COM: TIME: MINOR:

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Updated 1/2019

Notes

1.) See https://www.lsu.edu/graduateschool for latest version of form.

2.) Membership guidelines for the Examination Committee are the same as for the Supervisory Committee (see guidelines elsewhere in the document).

3.) Submit completed form to MEDP program coordinator.

G. PhD Supervisory Committee Request Form

Student Name:

PROPOSED PhD SUPERVISORY COMMITTEE MEMBERSHIP

Proposed Member Name, Degree	Member's Graduate Faculty Status (full, associate, affiliate, or non-member) *	Member's Program Faculty Status/ Department Rank (regular, adjunct, or non-member / professor, associate or assistant professor) *	Member's Areas of Expertise (research interests of relevance) *	Member's Major Department and Institution*	Member's Approval (initials)
1. (Major Professor and Committee Chair)					
2.					
3.					
4.					
5.					

This can be found in the directory of program of faculty listed elsewhere in this handbook.

Signature of Committee Chair: Date:

Signature of Program Director: Date:

Note
Submit completed form to MEDP program coordinator.
Form MEDP-PHDSUP-2, Revised 13 Aug 2020

H. Request for Final Doctoral Examination Form

LSU | Graduate School

Request for Final Doctoral Defense

This form must be submitted to The Graduate School ***three weeks prior*** to the defense date or by current semester deadline for graduation.
Email submission to gradsvcs@lsu.edu.

Student Information:

LSU Student ID: Defense Date:

Name: Time & Place:

Department: Previously Scheduled?

Major: Minor:

Dissertation Title:

Note: If the title changes after the defense, please ensure the Doctoral Approval Sheet reflects the new title.

Committee Information:
Doctoral committees must include a total of 3 members plus the Dean's Representative: two full members of the graduate faculty, including one from the major department. If a minor is declared, the minor department must be represented. If you are including a member of Southern University's graduate faculty, indicate the institution with (SU) after the name. **Please remember to include the Dean's Representative.**

Committee Members (Print Names Below):

Committee Chair: _____ Member: _____

Co-Chair (if applicable): _____ Member: _____

Dean's Representative: _____ Member: _____

Minor Professor: _____

Required Signatures:

Committee Chair: _____ Date: _____

Chair, Head of Department, or
Graduate Advisor: _____ Date: _____

Dean of the Graduate School: _____ Date: _____

For Office Use Only:

GPA: CW: TIME: REG: COM: MINOR:

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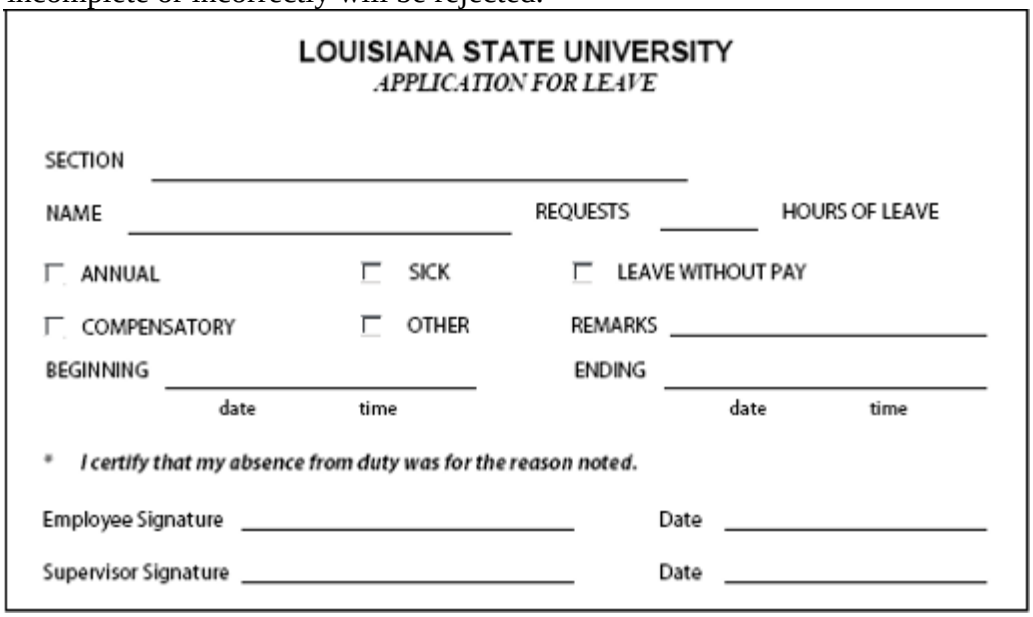
Updated 2/2019

Notes
1.) See https://www.lsu.edu/graduateschool for latest version of form.
2.) Membership guidelines for the Examination Committee are the same as for the Supervisory Committee (see guidelines elsewhere in the document).
3.) Submit completed form via MEDP program coordinator.

I. Leave Request Form

Important Note: Read section "V.G Student Leave Policy" of this handbook before filling out this form. It explains how to correctly complete the form. Any submitted form that is incomplete or incorrectly will be rejected.



LOUISIANA STATE UNIVERSITY

APPLICATION FOR LEAVE

SECTION _____

NAME _____ REQUESTS _____ HOURS OF LEAVE

☐ ANNUAL ☐ SICK ☐ LEAVE WITHOUT PAY

☐ COMPENSATORY ☐ OTHER REMARKS _____

BEGINNING _____ ENDING _____

date time date time

* *I certify that my absence from duty was for the reason noted.*

Employee Signature _____ Date _____

Supervisor Signature _____ Date _____

Form MEDP-LEAVE-1, Revised 11 Aug 2015

Note 1: Submit completed form to MEDP program coordinator.

Note 2: Hours of leave requested should include hours during normal business hours. Time during weekends and observed holidays should not be included.

Note 3: "Section" and "Remarks" are optional fields. All other information must be provided. See section on Student Leave Policy for detailed instructions.

J. Trainee Exit Interview Form

Trainee Name:

Instructions: Students should be aware of the items on the program checkout list below and complete these tasks in a timely manner. Please work with various staff listed below to document completion of all items.

Program Checkout: (Please have designated initials for each field)

Program Manager:

_____Student returned identification badge(s) to administrative staff.

_____Student returned any personal radiation badges and rings to Radiation Safety Office.

_____Student cleaned work area, removed any temporary materials, and returned any borrowed equipment or supplies remaining from your research.

_____Student provided copy of proof of submission of thesis or dissertations to LSU.

_____Student returned all LSU keys to the LSU Physics Department Building Coordinator.

_____Student completed Exit Questionnaire Form (see next page)

_____Program Director notified main office staff (Paige Whittington) of separation date.

(This should be done two weeks prior to separation date).

_____Program Coordinator provided student with letter of attestation of completion of all degree requirements (*i.e.*, needed for employment verification), signed by Prog. Dir.

Advisor

_____Faculty supervisor confirmed date of separation from LSU:_____.

Student

_____Student identified desired date of separation from LSU:_____.

The information provided above is complete and correct to the best of my knowledge.

Student Signature: Date:

Reviewed and approved by:

MEDP Program Manager: Date:

Program Director: Date:

Form MEDP-EXIT-2, Revised 13 Aug 2020

Note: Submit completed form to MEDP program coordinator.

K. Trainee Exit Questionnaire Form

1.) Contact Information: Please provide your personal contact information so that we may reach you after you have completed your training with us. If your do not yet have a new mailing, please indicate that and provide it to us once you have it.

Field	Answer
Student's Name (last, first)	
Today's Date (MM-DDD-YYYY)	
Phone Number	
Personal Email Address	
Personal Postal Address (Street)	
(City, State, Zip Code)	
(Country)	

2.) Status of Next Position: What is the status of your next position? Check one.

I have not received an offer. ☐
I have received, but not yet accepted an offer. ☐
I accepted an offer. ☐

3.) Type of Next Position: If you have accepted an offer, indicate the type of position Check one.

Field	Check Box
Residency Training Program	☐
Clinical Position	☐
Another Degree Program	☐
Industry	☐
Government	☐
Still Seeking a Position	☐
Other	☐

4.) Start Date: If you have accepted an offer, what is the start date of your next position? Note that you may estimate an approximate anticipated start date if the actual date is not known.

Start Date:

5.) Contact Information at New Position: If you have accepted an offer, provide your new contact information. If some items are not yet available, please so indicate.

Field	Answer
Name of Institution	
Department or Unit	
Work Email Address	
Work Postal Address (Street)	
(City, State, Zip Code)	
(Country)	
Work Phone Number	

Form MEDP-QUEST-2, Revised 24 Jul 2020
Note: Submit completed form to MEDP program coordinator.

L. Annual Certification Status Update Form

Student or Alumnus Name:_____Report for the calendar year of _____
Date this form was completed: _____

1.) ABR Track (choose one or more as applicable):

☐ Diagnostic medical physics
☐ Therapeutic medical physics
☐ Nuclear medical physics

2.) ABR Part I

In order to be eligible to take Part I, a candidate must be enrolled in or have graduated from a CAMPEP-accredited education program, certificate program, or residency. *

Did you pass Part I in a previous calendar year? ☐Yes ☐No

If yes, what year? _____Proceed to Question 3

Did you become eligible for Part I in this calendar year? ☐Yes ☐No

Did you take Part I in this calendar year? ☐Yes ☐No

If yes, indicate result ☐Pass ☐Fail

If you have not yet taken or passed Part I, when do you anticipate taking it? _____

3.) ABR Part II

*In order to be eligible to take Part II, a candidate must have passed Part I and completed the CAMPEP-accredited program that was used for Part I eligibility, as well as hold an advanced degree from an approved program.**

Did you pass Part II in a previous calendar year? ☐Yes ☐No

If yes, what year?_____Proceed to Question 4

Did you become eligible for Part II in this calendar year? ☐Yes ☐No

Did you take Part II in this calendar year? ☐Yes ☐No

If yes, indicate result. ☐Pass ☐Fail

If you have not yet taken or passed Part II, when do you anticipate taking it? _____

4.) ABR Part III

*In order to be eligible to take Part III, a candidate must have passed Part I and the candidate's chosen exams in Part II.**

Did you pass Part III in a previous calendar year? ☐Yes ☐No

If yes, what year?_____Proceed to Question

6 Did you become eligible for Part III in this calendar year? ☐Yes ☐No

Did you take Part III in this calendar year? ☐Yes ☐No

5.) Other Certification

If applicable, indicate any other boards, e.g., ABMP, ABHP, including your current status _____, any changes in this calendar year, and anticipated examination dates_____.

6.) State Licensure and Registration

Were you licensed or registered in this calendar year? ☐Yes ☐No

If yes, indicate state_____and type: ☐Inaugural ☐ Renewal

Student or Alumnus Signature_____Date:_____

Form MEDP-ABR-1, Revised 23 Aug 2016. **Note:** Submit completed form to MEDP program coordinator.

M. Independent Study Approval Form

MEDP-8000 and PHYS-9000

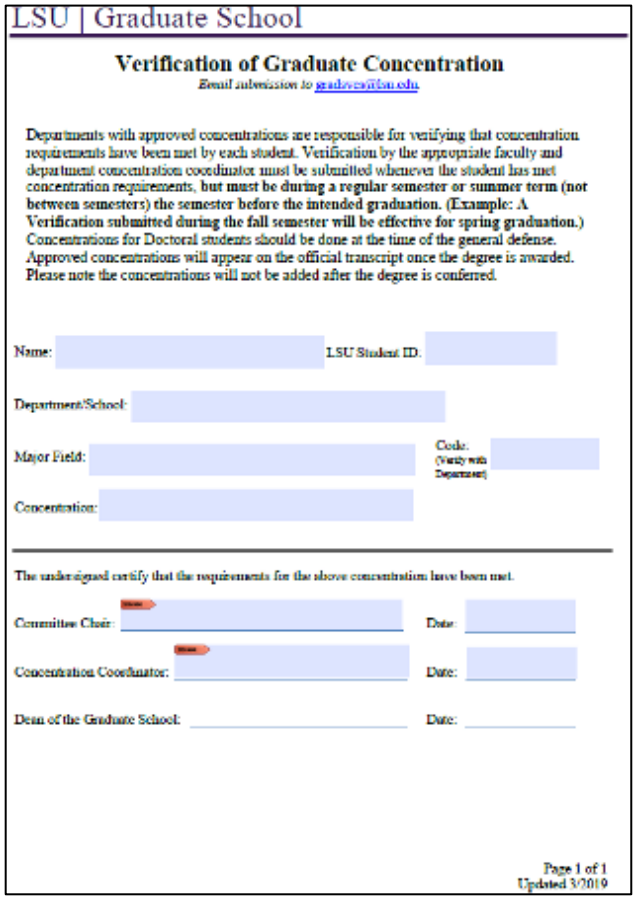
Please return the form below to the Graduate Administrative Coordinator in the Graduate Secretary Office (Room 202A) if you are registering for an independent student course (MEDP-8000, PHYS-8000, 9000, etc.). Full-time enrollment for the Fall and Spring semesters is nine or more hours and Summer is six or more hours.

INDEPENDENT STUDY APPROVAL FORM

Field	Answer
GRADUATE STUDENT NAME:	
LSU STUDENT I.D. NUMBER:	
SEMESTER:	
INDEPENDENT COURSE NO.:	
NUMBER OF CREDIT HOURS:	
GRADUATE ADVISOR:	
GRAD ADVISOR SIGNATURE:	

Note: Submit a copy of the completed form to MEDP program manager.

N. Verification of Graduate Concentration Form



LSU | Graduate School

Verification of Graduate Concentration

Email submission to gradsch@lsu.edu

Departments with approved concentrations are responsible for verifying that concentration requirements have been met by each student. Verification by the appropriate faculty and department concentration coordinator must be submitted whenever the student has met concentration requirements, **but must be during a regular semester or summer term (not between semesters) the semester before the intended graduation. (Example: A Verification submitted during the fall semester will be effective for spring graduation.)** Concentrations for Doctoral students should be done at the time of the general defense. Approved concentrations will appear on the official transcript once the degree is awarded. Please note the concentrations will not be added after the degree is conferred.

Name: LSU Student ID:

Department/School:

Major Field: Code: (Verify with Department)

Concentration:

The undersigned certify that the requirements for the above concentration have been met.

Committee Chair: Date:

Concentration Coordinator: Date:

Dean of the Graduate School: Date:

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Updated 3/2019

Notes

1.) All students in our program must submit this form.
2.) Submit at least one semester before your defense (MS students) or at time of your general exam (PhD students).
3.) By submitting this form, your final transcripts will be designated correctly with the Medical Physics or Health Physics concentration. This is required by CAMPEP, ABR, and ABHP as evidence completed of an approved curriculum.
4.) Download the latest version of form (fillable PDF) from https://www.lsu.edu/graduateschool.
5.) Complete the form electronically.
   - In the form, the Department is "Physics & Astronomy" for all students.
   - See the official versions of the degree concentration codes listed by LSU here: https://catalog.lsu.edu/mime/media/view/19/1843/GRAD+TABLE+2019-20+for+catalog2.pdf.
   - Use the following to determine the fields of relevance to you:
     - For Health Physics Masters students, Major Field is "Medical Physics and Health Physics", Concentration is "Health Physics", and Code is "HLTPHM"
     - For Medical Physics Masters students, Major Field is "Medical Physics and Health Physics", Concentration is "Medical Physics", and Code is "MEDPHM"
     - For PhD students, Major Field is "Physics", Concentration is "Medical Physics", and Code is "PMPHP"
     - For Post Doctoral Certificate students, Major Field is "Physics", Concentration is "Medical Physics", and Code is "PDCMP".
6.) After you have completed the form, your thesis/dissertation supervisor should sign electronically as Committee Chair. Then our Concentration Coordinator (Kip Matthews) will add his signature; he will then forward the signed form to the Graduate School and send copies to the Program Office and the Physics Department Office.

O. Other Forms

Approximately 30 additional forms are available from the graduate school.
Please visit the site below to locate and download the latest version of their forms.

https://www.lsu.edu/graduateschool/forms.php