

# TRAINEE HANDBOOK



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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,

Academic Year 2024-2025

**CAMPEP ACCREDITED**

**MS Degree: 2006-2026**

**PhD Degree: 2011-2026**

**Post-Doctoral Certificate: 2014-2026**

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## **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. All students should use the handbook as their starting point for finding information on a variety of tasks, such as convening advisory committee meetings, preparing research proposals, and defending dissertations. The handbook also provides sample timelines and checklists of degree requirements to be completed.

The handbook is intended to serve as a reference. Students should consult the handbook on topics as these come up. Commonly encountered topics can be found in the table of contents or by searching the handbook. Trainees should consult the handbook prior to seeking help from faculty or staff. The handbook is revised periodically to meet the needs of trainees; please report errors to the Program Director and Program Manager. When in conflict, Graduate School or Physics & Astronomy Department rules typically take precedence over this handbook.

Fillable electronic forms are available at

<https://www.lsu.edu/physics/graduate-programs/medical-physics/handbook.php> and  
[https://www.lsu.edu/graduateschool/students/grad\\_student\\_forms.php](https://www.lsu.edu/graduateschool/students/grad_student_forms.php).

### **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 medical physics tracks of the MS and PhD degrees as well as the PDC are accredited by the Commission on Accreditation of Medical Physics Education Programs (CAMPEP) through 2026.

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 science or engineering fields (or from a program that was not accredited by CAMPEP) 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 ionizing 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 as 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 academia, 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 academia, industry, and government.
- To enter a PhD program. Note that LSU does not currently offer a PhD degree in Health Physics.

## **D. Graduate Student Orientations**

Incoming graduate students typically have many questions, many of which are answered in an orientation process. Mandatory major orientation activities include:

- Visit the LSU Graduate School website at <https://www.lsu.edu/graduateschool/students/new-graduate-students.php>. You will find guidance on getting started with graduate studies. It is important that you take care of all of these items before the relevant deadlines.
- Attend all orientation sessions.

- The Medical and Health Physics Program orientation. You will receive a copy of our Trainee Handbook, which contains guidance on most aspects of our program.
- The LSU Graduate School orientation. They will announce details.
- The Department of Physics and Astronomy orientations, one for all incoming graduate students and another for teaching assistants. The department will announce details.
- International students orientation. See <https://www.lsu.edu/global-engagement/faculty-scholars/new/orientation.php> for details. The main purpose of the International Student Orientation program is for all F-1 and J-1 visa holders to “report” to the University. This includes completion of some immigration-related paperwork.

## **E. Student Advising**

The student’s advisor is either the Program Director or the 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 advisor will meet with the student periodically to complete tasks such as confirming satisfactory progress and updating the student’s academic plan, or to ascertain the nature, scope, and magnitude of any concerns. The advisor may provide guidance to the student (e.g., addressing progress toward degree completion). A major professor will refer the student to the Program Director as needed. The advisor may refer a student to other qualified individuals or units (e.g., Department Chair, Dean of Graduate School, student health office, and Title IX office) as appropriate to a particular situation.

Accreditation standards require that the Program Director monitors the performance of each student. Monitoring occurs via several methods, such as discussions with students, discussions with faculty supervisors, and review of written Supervisory Committee Reports (typically submitted twice per year).

## **F. Program Office**

The Program Manager of the Medical Physics and Health Physics Program is a resource to assist students with education issues. The Program Office is located at room 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. The Program Manager may work remotely one day per week. Be aware that there will occasionally be days on which coverage is not available. Please plan accordingly.

The Program Manager position is currently vacant. Until filled, please see the Program Director, who will direct you to appropriate staff or resources.

## II. Educational Programs

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

The LSU General Catalog (<https://lsu.edu/academics/catalogs.php>) stipulates the requirements for MS degree. See the Graduate School section for Requirements for Master's Degree, as well as the section on Graduate School Regulations for general rules.

#### 1. Curriculum

The Medical Physics Concentration requires 36 hours of didactic course and clinical training, and at least 6 hours of thesis research. The coursework meets the recommendations of CAMPEP [1]. The Health Physics Concentration requires 33 hours of coursework, plus a minimum of 6 hours of thesis research. Students in the Health Physics concentration usually do not participate in clinical training.

The LSU Graduate School requires that at least half of the didactic (non-research) credits counted towards degree requirements must be taken at LSU, that at least half of the didactic (non-research) credits must be taken at the 7000-level, and that only a limited amount of coursework from prior MS degrees or courses taken at other institutions can count towards degree requirements. Consult the LSU General Catalog (<https://lsu.edu/academics/catalogs.php>), the research supervisor, and the Program Director about these requirements.

The tables below list courses in both concentrations, including the number of credit hours.

#### 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

#### ADDITIONAL REQUIRED COURSES (MEDICAL PHYSICS CONCENTRATION)

Hrs.	Course Num.	Name
(3)	MEDP-4210*	Radiographic Anatomy
(3)	MEDP-7111	Advanced Medical Imaging Physics
(3)	MEDP-7210	Clinical Principles of Radiation Therapy
(4)	MEDP-7260	Clinical Medical Physics Rotation
(3)	MEDP-7270	Advanced Radiation Therapy Physics
(3)	MEDP-7331	Radiation Therapy Physics

\*pending approval of new course number by Courses & Curriculum

#### 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

\* Electives for Health Physics concentration include the additional required courses from Medical Physics concentration. Electives from outside of MEDP and NS are also permitted

### **Clinical Rotation (Medical Physics Concentration Only)**

The student must complete one 4-credit hour clinical rotation (MEDP-7260 Clinical Medical Physics Rotation), typically 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.

### **Typical Academic Plan (Medical Physics Concentration)**

Minimum full-time registration is 9 credits in Fall and Spring semesters; if a student registers in a summer term, 6 credits comprise full-time registration. Typical time to completion for the Medical Physics concentration is two years + 2 semesters.

#### **YEAR 1, FALL SEMESTER**

(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, SPRING SEMESTER**

(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

\*\*\*MATCHING TO RESEARCH SUPERVISOR IN CONSULTATION WITH PROGRAM DIRECTOR\*\*\*

#### **YEAR 1, SUMMER SEMESTER**

Typically no course registration in summer terms. Available for preliminary research.

#### **YEAR 2, FALL SEMESTER**

(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

\*\*\*REGISTRATION FOR ABR PART 1 EXAM\*\*\*

#### **YEAR 2, SPRING SEMESTER**

(3)	MEDP 4210	Radiographic Anatomy
(3)	MEDP-7210	Clinical Principles of Radiation Therapy
(3)	MEDP-8000	Thesis Research



\*\*\* FORMATION OF SUPERVISORY COMMITTEE AND PROPOSAL \*\*\*

YEAR 2, SUMMER SEMESTER

Typically no course registration in summer terms. Available for thesis research.

\*\*\* ABR PART 1 EXAM \*\*\*

YEAR 3, FALL SEMESTER

(9) MEDP-8000 Thesis Research

YEAR 3, SPRING SEMESTER

(9) MEDP-8000 Thesis Research

\*\*\* END OF SEMESTER IS TARGET FOR FINAL DEFENSE \*\*\*

YEAR 3, SUMMER SEMESTER

Depending on the timing of completion of degree requirements, students may register for MEDP-8000 or be registered degree-only during the Summer term

**Typical Academic Plan (Health Physics Concentration)**

Typical time to completion for the Health Physics concentration is two years. \*NS-4352 and NS-4570 are offered in alternate years; take these in the semester offered.

YEAR 1, FALL SEMESTER

(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, SPRING SEMESTER

(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

\*\*\*MATCHING TO RESEARCH SUPERVISOR IN CONSULTATION WITH PROGRAM DIRECTOR\*\*\*

YEAR 1, SUMMER SEMESTER

Typically no course registration in summer terms. Available for preliminary research. Elective courses (3-6 credits) can be taken.

YEAR 2, FALL SEMESTER

(6-9) electives Elective courses

(1) MEDP-7995 Medical Physics and Health Physics Seminar

(0-3) MEDP 8000 Thesis Research

\*\*\* FORMATION OF SUPERVISORY COMMITTEE AND PROPOSAL \*\*\*

YEAR 2, SPRING SEMESTER

(3) \*NS 4570 Nuclear Facility Safety

(0-3) elective Elective course

(3-6) MEDP-8000 Thesis Research

YEAR 2, SUMMER SEMESTER

(6) MEDP-8000 Thesis Research

\*\*\* END OF SEMESTER IS TARGET FOR FINAL DEFENSE\*\*\*

#### YEAR 3, FALL SEMESTER

Depending on the timing of completion of degree requirements, students may register for MEDP-8000 or be registered degree-only during the Fall term

### **M.S. Thesis Milestones**

The following is a typical timeline to meet the major milestones of the Medical Physics concentration.

- Year 1: Fall/Spring semesters: Introduction to Faculty Research (in MEDP 7995 Seminar)
- Year 1, Spring semester: Matching to Faculty Supervisor
- Year 1, Summer semester: Initial Research Effort
- Year 2, Fall semester: Continuing Research Effort
- Year 2, Spring semester: Continuing research Effort; Formation of Supervisory Committee; Approval of Research Proposal by Supervisory Committee
- Year 2, Summer semester: Full-time Research Effort
- Year 3, Fall semester: Full-time Research Effort
- Year 3, Spring semester: Completion of M.S. Thesis and Final Defense

The following is a typical timeline to meet the major milestones of the Health Physics concentration.

- Year 1: Fall/Spring semesters: Introduction to Faculty Research (in MEDP 7995 Seminar)
- Year 1, Spring semester: Matching to Faculty Supervisor
- Year 1, Summer semester: Initial Research Effort
- Year 2, Fall semester: Continuing Research Effort; Formation of Supervisory Committee; Approval of Research Proposal by Supervisory Committee
- Year 2, Spring semester: Continuing research Effort
- Year 2, Summer semester: Completion of M.S. Thesis and Final Defense

## **2. Research Supervisor and Supervisory Committee**

Each student will be matched to a research supervisor. Typically, the matching of students and supervisors is a process that occurs during the first year of graduate study. In some cases, students may be matched to a research supervisor immediately upon admission. Matches are proposed by the student and prospective supervisor, with the concurrence of the Program Director.

Each student is required by the Medical Physics and Health Physics Program to have an approved Supervisory Committee, which is chaired by the major professor (research supervisor). The Supervisory Committee is charged with:

- assisting the student in developing a research plan,
- mentoring the student in completing his or her research,
- mentoring the student's writing of the research, and
- evaluating the student's research via the written thesis and public defense.

The student should meet regularly with his or her supervisor; meetings with the Supervisory Committee should occur as needed, but typically no less than once per semester. Scheduling of meetings is the responsibility of the student with the assistance of the supervisor. The use of a scheduling tool such as when2meet or Doodle is often helpful. The use of calendar invitations and reminders a few days ahead of a scheduled meeting is advisable.

Supervisory committee meetings can be held either on-campus or at a remote work site (e.g., Mary Bird Perkins Cancer Center) with the agreement of all attendees. The student should make sure that committee members are provided with driving and parking information when meetings are held off-campus. All committee members should be invited to interim committee meetings but it is acceptable if not all members (especially the Physics & Astronomy faculty representative) can attend. All committee members must attend the final defense and public seminar.

The Supervisory Committee recommends the Examination Committee (which may be itself) to the Department Chair and Dean of the Graduate School for approval. The Exam committee must comply with Graduate School guidelines.

### **Membership Guidelines**

The Supervisory Committee comprises at least three members with the following requirements:

- The 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 & Health Physics Program faculty (full-time or adjunct). His or her area of research should be consistent with that of the student's research topic.
- If the chair is adjunct faculty, the Committee must have a co-chair who is full-time faculty and a full or associate member of the graduate faculty.
- There should be at least 2 members who are faculty (full-time or adjunct) of the Medical Physics & Health Physics Program.
- There should be at least one member who is a faculty of the Department of Physics & Astronomy and who is neither a medical physicist nor health physicist.
- At least 50% of the committee roster must be full-time LSU faculty.
- At least one committee member must be a full member of the LSU Graduate Faculty.
- Any non-faculty members should be appointed to the Committee based on their ability to contribute resources or expertise that would benefit the student's research.

Consult the Program Director, the research supervisor, and the Graduate School website to obtain information about Graduate Faculty status for prospective committee members. If the student is completing a minor, see the Graduate School requirements in the LSU General Catalog for additional requirements. Submit the M.S. Supervisory Committee Membership form to document the roster for Program records.

*These guidelines are intended to comply with current LSU Graduate School requirements. Because LSU guidelines occasionally change, the student and supervisor should review and follow the most recent guidance from the Graduate School regarding the membership guidelines.*

### **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 a research supervisor no later than the summer at the end of the first year, followed by formation of the Supervisory Committee. Once formed, the Supervisory Committee should meet at least twice yearly with the student. No later than the spring semester of the second year, the student's Research Plan should be approved by the student's Supervisory Committee.

The M.S. thesis is complete upon (1) the student delivering a public seminar, (2) the student passing an oral examination on the thesis given by the Examining Committee, (3) approval of the final thesis by the Examining Committee, and (4) acceptance of the final thesis by the Graduate School. The LSU Graduate School establishes deadlines each semester for the completion of these requirements, including submission of relevant paperwork. See the Graduate School website

(<https://www.lsu.edu/graduateschool/students/index.php>) for this information, including the calendar (<https://lsu.edu/graduateschool/students/calendars.php>).

The student should prepare at least a first draft of at least one manuscript based on the thesis work for submission to an appropriate peer-reviewed scientific 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 for externally-funded research, which subsequently supports future students.

The student should meet regularly with his or her supervisor, and meetings with the Supervisory Committee should occur as needed, but typically no less than once per semester. Scheduling of meetings is the responsibility of the student with the assistance of the supervisor. The use of a scheduling tool such as when2meet or Doodle is often helpful. The use of calendar invitations and reminders a few days ahead of a scheduled meeting are advisable.

Supervisory committee meetings can be held either on-campus or at a remote work site (e.g., Mary Bird Perkins Cancer Center) with the agreement of all attendees. The student should make sure that committee members are provided with driving and parking information when meetings are held off-campus. All committee members should be invited to interim committee meetings but it is acceptable if not all members (especially the Physics & Astronomy faculty representative) can attend. All committee members must attend the final defense and public seminar.

## **M.S. Thesis Proposal**

Each student will develop a proposal for their thesis research project. The preparation of a research proposal is an important part of the students' education and training. Students 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.

The research proposal details the significance and scope of the planned research and demonstrates the student's relevant knowledge and skills. Typical knowledge and skills include competence in relevant physics concepts, familiarity with pertinent literature, and base skills in coding, statistical analysis, and written and oral scientific communication. Proposals are written by the student under the supervision of the student's principal research advisor. The Program does not stipulate the format of the proposal; the student should follow the recommendation of the supervisor. The style for the research strategy section of an NIH funding proposal ([http://grants.nih.gov/grants/writing\\_application.htm](http://grants.nih.gov/grants/writing_application.htm)) can be a useful style to follow for presenting the goals, hypotheses, aims, and timeline of a thesis proposal.

The student submits the written proposal to the supervisory committee. The student also orally presents the proposal to the supervisory committee, who typically provide constructive criticism and other feedback that is helpful in finalizing the project proposal. After approval by all committee members, the student submits the proposal to the Program for record keeping purposes. While there is not a specific deadline for final approval of the proposal, it should happen as early as reasonable in the student's research efforts, preferably no later than the end of the Spring semester of the 2<sup>nd</sup> year of graduate study.

## **Guidelines for Thesis Formatting and Style**

### **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 is the culmination of hypothesis-driven research in medical physics or health physics, according to the student's and supervisor's research focus. The M.S. thesis demonstrates the student's ability (1) to conduct scientific research under supervision of an experienced researcher, (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 Program expects the M.S. thesis research to be published in an appropriate peer-reviewed scientific journal. A typical M.S. thesis research project leads to at least one publication. Examples of relevant 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; and Health Physics. The manuscript(s) should ideally be submitted to the journal for peer review prior to the final defense. Manuscript preparation requires considerable interaction between the student and the 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. Because of the length of the review and revision process relative to the timeline for completion of the MS degree, it is not uncommon that work toward publication of a manuscript continues after completion of degree requirements and the student's departure for the next phase of training (e.g., a residency program). In this case, the graduate should make every effort to complete this work in a diligent and timely manner.

### ***Thesis Style***

The LSU Graduate school provides guidelines for thesis style and formatting, as well as specific material that must be included in the thesis. Discipline-specific templates for Microsoft Word and Latex are available. The guidelines and templates, along with instructions and timeline for submission, are available at [https://lsu.edu/graduateschool/students/theses\\_and\\_dissertations.php](https://lsu.edu/graduateschool/students/theses_and_dissertations.php) (2024). Research advisors may also have preferences and recommendations on style for theses and dissertations from their labs; Graduate School requirements must be given precedence in cases of conflicting styles.

Theses are typically written in one of two basic styles: the traditional style and the European style. Both styles comprise a unified collection of front matter (cover page, table of contents, abstract, etc.) and back matter (references, appendices, vita, etc.). Chapters in the traditional style provide background material, methods, results, and discussion; the organization of the chapters is decided by the student, the advisor, and the needs for communicating the research. In the European style, the chapters of the thesis contain individual manuscripts that are either in preparation, under review, in press, or published. The student is normally the first author on such publications; verify Graduate School rules if the student is not the first author. The LSU Graduate School requires a European style thesis to include unifying chapters for introduction and conclusion, along with the chapters and front/back matter. The text content and figures of the chapters must follow the verbatim material as accepted or published by the journal. Students must obtain permission from the journal to replicate the published work; the permissions must be included as an appendix in the thesis. Because an MS thesis typically results in one manuscript, a traditional-style thesis and the manuscript submission may be very similar, and thus the traditional style is often preferred. If the thesis produces more than one publication, the European style can be advantageous to use.

Each thesis is unique and depends on the nature and scope of the research, the style of thesis, and

other factors. The Program has high expectations on the quality of both the research and the communication of the results in the thesis. Thesis length is not mandated by the Program, but students should write concisely and clearly. (For comparison, a typical manuscript submission is approximately 30 pages of text, figures, tables, and references; a thesis includes this material plus required front and back matter, as well as appendices for relevant information that is not included in the core thesis.

#### **4. Final Exam and Thesis Defense**

The Medical Physics and Health Physics Program faculty recommends that all Final Exams / Thesis 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 Program recommends the following format and content for the Public Seminar and MS Thesis Defense. These recommendations are intended to comply with the established process of the Department of Physics & Astronomy. MS thesis defenses may be held at LSU or MBPCC.

- 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 focuses 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, the student should follow up with committee members regarding questions asked, recommendations for edits to the dissertation, etc.

#### **Thesis Distribution**

The student submits the approved post-final defense thesis to the LSU Graduate School as a degree requirement. After final Graduate School approval, the student provides an electronic copy of this version to the Department, the Program, and all members of the Supervisory Committee.

#### **Timeline To Completion**

The table below provides a timeline that measures deadlines backwards from the expected approval date of the final thesis by the LSU Graduate School. 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 <u>no less than 2 weekends</u> 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 <u>no less than 2 weekends</u> to review and comment
--	1 <sup>st</sup> Committee Meeting	Proposal presentation for Committee
~5 months† (-43 wks)	Research (phase 2)	Student is advised to begin compilation of thesis during this time
--	2 <sup>nd</sup> 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 <u>no less than 2 weekends</u> 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 <u>no less than 2 weekends</u> to review and comment
1 wk (-8 wks)	Last (3 <sup>rd</sup> ) Committee Meeting	Presentation (mock defense) to committee. If acceptable, committee approves scheduling of defense.
minimum 3 wks (-7 wks)	Submit Exam Request form	<i>Exam Request</i> 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. <i>Exam Results</i> form routed by Advisor via MEDP Program Office
--	Implement final Committee revisions	<i>Thesis Approval</i> 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:

- Do be proactive in developing and maintaining your unique timeline. Your advisor will provide assistance and guidance.
- Do coordinate closely with your advisor at every stage.
- 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.).

- 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.
- 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.
- Do be prudent and wise in requesting time commitments from your advisor and committee members.
- 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.
- 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:

- Don't assume that your advisor and committee can drop other commitments to accommodate last-minute scheduling requests.
- Don't assume that deadlines for degree requirements can be negotiated at the last minute.
- 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.
- 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)**

The LSU General Catalog (<https://lsu.edu/academics/catalogs.php>) stipulates the requirements for the PhD degree. See the section for the Graduate School, Requirements for the Doctor of Philosophy Degree, as well as the section on Graduate School Regulations for general rules.

### **1. Curriculum**

The PhD degree requires a minimum of 54 credits of coursework and dissertation research. The curriculum is separated into core requirements (min. 28 credits), advanced medical physics electives (min. 9 credits), outside electives (min. 6 credits), and at least 6 credits of dissertation research. PhD coursework can be tailored to the individual student, but students and supervisors must make sure that core CAMPEP-required material is taken. Table 1 lists the core course requirements for the Ph.D. degree in Physics (Medical Physics). The core coursework follows the recommendations of CAMPEP [1]. Table 2 lists examples of advanced medical physics elective courses. Outside elective courses should be at the 7000 level and offered outside of the MEDP rubric. The academic plan is set by the student and supervisor, with the approval of the supervisory committee and in consultation



with the Program Director.

The LSU Graduate School stipulates that PhD students must take at least half of the didactic (non-research) credits counted towards degree requirements must be taken at LSU and that at least half of the didactic (non-research) credits must be taken at the 7000-level. Consult the LSU General Catalog (<https://lsu.edu/academics/catalogs.php>), the research supervisor, and the Program Director about these requirements. Students wishing to count course credit from other institutions towards degree requirements should consult with the Program Director.

TABLE 1. CORE COURSES FOR THE PH.D. IN PHYSICS (MEDICAL PHYSICS).

Course ID	Course Name	Credit Hours
MEDP-4111	Introduction to Medical Imaging	3
MEDP-4210	Radiographic Anatomy (pending approval of new course #)	3
MEDP-4331	Radiation Protection and Exposure Evaluation	3
MEDP-4351	Radiation Detection and Instrumentation*	2
MEDP-4352	Radiation Detection Laboratory*	1
MEDP-7111	Advanced Medical Imaging Physics	3
MEDP-7121	Radiobiology	3
MEDP-7260	Clinical Radiation Therapy Rotation	4
MEDP-7331	Radiation Therapy Physics	3
MEDP-7530	Radiation Shielding	3
MEDP-7537	Radiation Interactions and Transport	3
MEDP-7995	Medical Physics and Health Physics Seminar**	1

\* 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.

TABLE 2. ADVANCED MEDICAL PHYSICS ELECTIVES FOR THE PH.D. IN PHYSICS (MEDICAL PHYSICS).

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

### **MEDP 7260 Clinical Rotation and MEDP 7210 Clinical Principles**

The student must complete one 4-credit hour clinical rotation (MEDP-7260 Clinical Medical Physics Rotation). 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. Because of the levels of time commitment required for both Teaching Assistant duties and the clinical rotation, PhD students generally should not take the clinical rotation during a semester when supported as a Teaching Assistant. Likewise, MEDP 7210 should not be taken during a semester when supported as a Teaching Assistant.

### **Typical Academic Plan**

Although the academic plan is tailored to each PhD student, the first several semesters are

frequently similar for all PhD students. A preliminary academic plan can be developed by the student in consultation with the Program Director; the research supervisor will assist the student to finalize the academic plan, e.g., deciding which elective courses to take and when. Minimum full-time registration is 9 credits in Fall and Spring semesters; if a student registers in a summer term, 6 credits comprise full-time registration.

There is no set time to completion for the PhD; 5 years is typically used for planning while the average time over the past decade is around 6 years. Completion times that exceed 7 years are strongly discouraged because the LSU Graduate School requires recertification of coursework after 7 years.

**YEAR 1, FALL SEMESTER**

- (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, SPRING SEMESTER**

- (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

\*\*\* MATCHING TO RESEARCH SUPERVISOR IN CONSULTATION WITH PROGRAM DIRECTOR \*\*\*

**YEAR 1, SUMMER SEMESTER**

Typically no course registration in summer terms. Available for preliminary research.

\*\*\* PhD QUALIFYING EXAM \*\*\*

**YEAR 2, FALL SEMESTER**

- (3) MEDP-7111 Advanced Medical Imaging Physics
- (3) MEDP-7270 Advanced Radiation Therapy Physics
- (1) MEDP-7995 Medical Physics and Health Physics Seminar
- (0-3) elective Elective course
- or
- (0-3) PHYS 9000 Dissertation Research

\*\*\* REGISTRATION FOR ABR PART 1 EXAM \*\*\*

**YEAR 2, SPRING SEMESTER**

- (3) MEDP 4210 Radiographic Anatomy
- (3) elective Elective course
- (3) PHYS 9000 Dissertation Research

\*\*\* FORMATION OF SUPERVISORY COMMITTEE \*\*\*

**YEAR 2, SUMMER SEMESTER**

Typically no course registration in summer terms. Available for dissertation research.

\*\*\* ABR PART 1 EXAM \*\*\*

**YEAR 3, FALL SEMESTER**

- (4) MEDP-7260 Clinical Radiation Therapy Physics Rotation
- (3) elective Elective course

(3) PHYS 9000 Dissertation Research  
\*\*\* PhD GENERAL EXAM \*\*\*

YEAR 3, SPRING SEMESTER

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

YEAR 3, SUMMER SEMESTER

Typically no course registration in summer terms. Available for dissertation research.

YEAR 4, FALL SEMESTER

(3) elective Elective course  
(6) PHYS 9000 Dissertation Research

YEAR 4, SPRING SEMESTER

(3) elective Elective course  
(6) PHYS 9000 Dissertation Research

YEAR 4, SUMMER SEMESTER

Typically no course registration in summer terms. Available for dissertation research.

YEAR 5, FALL SEMESTER

(9) PHYS 9000 Dissertation Research

YEAR 5, SPRING SEMESTER

(9) PHYS 9000 Dissertation Research  
\*\*\* END OF SEMESTER IS TARGET FOR FINAL DEFENSE\*\*\*

YEAR 5, SUMMER SEMESTER

Depending on the timing of completion of degree requirements, students may register for MEDP-8000 or be registered degree-only during the Summer term

### PhD Dissertation Timeline

A typical timeline for major milestones for the PhD in Physics (Medical Physics) is:

- Year 1: Fall/Spring semesters: Introduction to Faculty Research (in MEDP 7995 Seminar)
- Year 1, Spring semester: Matching to Faculty Supervisor
- Year 1, Summer semester: Initial Research Effort; PhD Qualifying Exam
- Year 2, Fall semester: Continuing Research Effort
- Year 2, Spring semester: Continuing Research Effort; Formation of Supervisory Committee
- Year 2, Summer semester: Continuing Research Effort
- Year 3, Fall semester: Continuing Research Effort; PhD General Exam
- Year 3, Spring semester: Continuing Research Effort
- Year 3, Summer semester: Continuing Research Effort; Submission of First Manuscript
- Year 4, Fall semester: Continuing Research Effort
- Year 4, Spring semester: Continuing Research Effort; Submission of Second Manuscript
- Year 4, Summer semester: Full-time Research Effort
- Year 5, Fall semester: Full-time Research Effort; Submission of Third Manuscript
- Year 5, Spring semester: Completion of PhD Dissertation and Final Defense

## 2. Qualifying Examination

The prospective doctoral student must qualify for the status of pre-doctoral candidate. In addition to Graduate School requirements regarding satisfactory progress, each student must pass a written Qualifying Examination. The Qualifying Examination provides an assessment of broad mastery of pertinent material covered in the Medical Physics core curriculum, which forms the basis for the student's future PhD studies and future career. The Qualifying Exam also provides feedback to the faculty regarding variations in teaching or drift in topical coverage in the core curriculum. Sections of the Qualifying Exam may also be used (a) to certify competency in core curriculum topics in the case of a request to transfer credit from another institution or (b) to recertify coursework if a student exceeds a 7-year time to completion.

The Qualifying Examination is mandatory for 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's supervisory committee may petition the Qualifying Exam Committee on the student's behalf to sit a third and final time for the exam.

The Qualifying Examination is administered once per year, typically in August. The dates, times, and location 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. 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. The score for a (unconditional) pass is 60% on all sections. An examinee who receives a conditional pass is expected to retake specified sections of the exam at the next offered exam date. An examinee who fails the exam is expected to retake the exam at the next offered exam date. Specific questions regarding the criteria for pass, conditional pass, and fail should be directed to the chair of the Qualifying Examination Committee.

The exam should first be attempted at the end of 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. The Qualifying Examination Committee determines the conditions for retaking part or all of the 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 (see Table 1). The Qualifying Exam is administered in three parts over the period of three consecutive days. The exam for each subject is gauged for 1 hour of effort. Consult the chair of the Qualifying Examination Committee for specific details about exam implementation and content. Books, notes, computers, or other devices or materials are not allowed during the examination; the Program provides calculators for the examinees' use.

The exam probes for knowledge of medical physics at the graduate level, including the application of general physics concepts 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.

The qualifying exam topics are graded by medical physics faculty as assigned by the chair of the Qualifying Examination Committee; the faculty currently teaching each topic typically are the graders. Exam scores are tabulated, scaled and reviewed by the Qualifying Examination Committee, then reported to the Program faculty. Results of the exam should be reported to examinees within 3 weeks after the exam.

TABLE 1. STRUCTURE, SUBJECTS, AND CORRESPONDING COURSES OF THE QUALIFYING EXAM.

Part I	Part II	Part III
General Physics*	Radiation Detection (MEDP 4351/4352)	Radiation Biology (MEDP 7121)
Radiation Physics (MEDP 7537)	Radiation Protection (MEDP 4331)	Radiation Therapy Physics (MEDP 7331)
	Radiation Shielding (MEDP 7530)	Imaging Physics (MEDP 4111)

\* The General Physics exam covers core physics concepts at the advanced undergraduate level which are relevant to medical physics, such as thermodynamics, electricity & magnetism, modern physics, relativistic mechanics, quantum mechanics, optics and waves, nuclear physics, electronics, and statistical analysis.

### 3. Research Supervisor and Supervisory Committee

Each student will be matched to a research supervisor. Typically, the matching of students and supervisors is a process that occurs during the first year of graduate study. In some cases, students may be matched to a research supervisor during admission or soon after matriculation. Matches are proposed by the student and prospective supervisor, with the concurrence of the Program Director.

Each student in the Ph.D. in Physics (Medical Physics concentration) is required to have an approved Supervisory Committee, which is chaired by the major professor (research supervisor). The Supervisory Committee is charged with:

- assisting the student in developing a research project that is approved by the program,
- mentoring the student in completing his or her research,
- mentoring the student's writing of the research, and
- 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, but typically no less than once per semester. Scheduling of meetings is the responsibility of the student with the assistance of the supervisor. The use of a scheduling tool such as when2meet or Doodle is often helpful. The use of calendar invitations and reminders a few days ahead of a scheduled meeting are advisable.

Interim supervisory committee meetings can be held either on-campus or at a remote work site (e.g., Mary Bird Perkins Cancer Center) with the agreement of all attendees. The student should make sure that committee members are provided with driving and parking information when meeting are held off-campus. All committee members should be invited to interim committee meetings but it is acceptable if not all members (especially the Physics & Astronomy faculty representative and the Dean's Representative) can attend. All committee members must attend the General Exam and also the Final Exam & Defense which includes a public seminar; PhD examinations can only be held on the LSU campus.

The Supervisory Committee recommends the Examination Committee (which may be itself) to the Department Chair and Dean of the Graduate School for approval. The Exam committee must comply with Graduate School guidelines.

## Membership Guidelines

The Supervisory Committee comprises at least three members of the Graduate Faculty with the following requirements:

- The 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.
- If the chair is adjunct faculty, the Committee must have a co-chair who is a full or associate member of the graduate faculty.
- There should be at least 2 members who are faculty (regular or adjunct) of the Medical Physics Program.
- There should be at least one member who is a faculty of the Department of Physics & Astronomy and who is neither a medical physicist nor health physicist.
- At least 50% of the committee roster must be full-time LSU faculty.
- At least two committee members must be full members of the LSU Graduate Faculty.
- Any non-faculty members should be appointed to the Committee based on their ability to contribute resources or expertise that would benefit the student's research.

Consult the Program Director, the research supervisor, and the Graduate School website to obtain information about Graduate Faculty status for prospective committee members. If the student is completing a minor, see the Graduate School requirements in the LSU General Catalog for additional requirements. A form to document the supervisory committee roster is in the appendix.

*These guidelines are intended to comply with current LSU Graduate School requirements. Because LSU guidelines occasionally change, the student and supervisor should review and follow the most recent guidance from the Graduate School regarding the membership guidelines.*

## 4. General Exam

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.

A primary focus of the General Exam is the dissertation proposal. See the sections on M.S. Thesis Proposal and Thesis Formatting Guidelines. Expectations for a Ph.D. dissertation proposal and the dissertation itself are comparable. The preparation of a research proposal is an important part of the students' education and training. The student must work closely with the research advisor throughout this process. In addition, the student should seek advice from the supervisory committee.

## Requirements of the Graduate School

The requirements of the Graduate School for the General Exam are provided in the LSU General Catalog (<https://catalog.lsu.edu/content.php?catoid=29&navoid=2726#general-examination>). The requirements are summarized here. The Program Director and the Departmental Graduate Advisor are the best sources for information about requirements. Graduate School requirements take precedence over Departmental requirements, which take precedence over Program requirements.

The General Exam Committee is proposed by the Advisory Committee using the "Request for General Exam" form. This request must be submitted by the student via the 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 Graduate School appoints an external member, the Dean's Representative, to the committee.

The Dean's Representative does not count towards any of the requirements enumerated above; see the LSU General Catalog and the Graduate School website for more information.

A student must be enrolled for at least 1 credit hours in the semester when the General Exam is taken; students on probation cannot take the General Exam. The General Exam must occur when the University is open for business. General Exams must take place on the LSU campus. All committee members must be present for the exam to take place; consult the Graduate School website for requirements about remote attendance by committee members. 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 on the departmental website (<https://www.lsu.edu/physics/graduate-programs/physics-astronomy/guide.php>). The General Exam must be completed by the end of the student's fourth year, although 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 frequently occurs approximately one year later. Note that the Graduate School requires a minimum of 3 months between the General Exam and the Final Defense.

The General Exam consists of two parts:

- 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.
- An oral defense of a written thesis proposal.

### **Expectations and Guidelines of the 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 members 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 research supervisor on all matters pertaining to the General Exam. Frequent communication with the research supervisor is essential.
- The LSU Program Manager will assist students with administrative matters (paperwork, room reservation, parking for off-site faculty, etc.). All paperwork must be routed through the Program Manager. The Program Director, Deputy Program Director, and Department Graduate Advisor are available for consultation.
- On matters of procedure, the Program Manager, 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 is available online from the LSU Graduate School. This form, which establishes the exam committee roster and schedules the exam date, must be routed through the Program Manager. The form must be submitted to the Graduate School via the Program and Department 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 typically occur around the beginning of the student's third year in the Program, approximately 1 year after the Qualifying Exam. For additional information, see the prior sections in this document about PhD timeline and typical academic plan.
- The Chair of the Exam Committee submits the exam results form to the Graduate School via the Program Office in a timely manner. The committee chair also submits the department assessment form to the department graduate coordinator and the program assessment form to the Program; both should be routed through the Program Manager.
- The student should submit a copy of the written proposal, and optionally a copy of the student's presentation, to the Program for its records.

## **5. Dissertation**

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. The dissertation reports the results of hypothesis-driven research in the area of medical physics chosen by the student and the research supervisor.

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).*

## **Journal Publication**

The expectation of the Program is that the dissertation research will be published in an appropriate peer-reviewed scientific journal. Two to three published manuscripts are a typical outcome of the dissertation. 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 by the time of the Final Defense. 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. Publication is essential and 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 in turn supports future students.

See the section on MS thesis style and formatting, which is directly applicable to PhD dissertation requirements. The scope of a dissertation is typically substantially larger than that of an MS thesis. Although there is no specific length requirements, students should write concisely and clearly. Additional material that is not essential to the core document may be placed in appendices of the dissertation. Note that because of the expectation of publishing multiple manuscripts on the dissertation research, the European style thesis format can be very advantageous.

## **6. Final Exam and Dissertation 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 Program recommends the following format and content for the Public Seminar and PhD Dissertation Defense. These recommendations are intended to comply with the established process of the Department of Physics & Astronomy. PhD defenses must be held on the LSU campus.

- 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 focuses 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, the student should follow up with committee members regarding questions asked, recommendations for edits to the dissertation, etc.

## **Dissertation Distribution**

The student submits the approved post-final defense thesis to the LSU Graduate School as a degree requirement. After final Graduate School approval, the student provides an electronic copy of this version to the Department, the Program, and all members of the Supervisory Committee.

## **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.

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).

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 register 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. COURSES ARE 3 CREDIT HOURS.

Topic	Course	Title	Semester
Imaging physics	MEDP-4111	Introduction to Medical Imaging	Spring
Anatomy and physiology	MEDP-4210	Radiographic Anatomy	Spring
Radiation protection	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

### 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 coincides with the application/admission cycle the MEDP graduate degree programs. The date of this deadline varies slightly each year, but typically 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 the Program 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 to be considered complete.

- 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.
- 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.
- Copies of all undergraduate and graduate diplomas.
- An up-to-date copy of applicant's academic Curriculum Vitae.
- Applicant's statement of purpose including a summary of academic and professional background and goals. This should be approximately one page in length.
- 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.
- 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.
- Not less than two and not more than four letters of recommendation.
- Letters must be sent by the writers directly to [pamedphys@lsu.edu](mailto:pamedphys@lsu.edu).
- 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.
- 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.
- 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.

- 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.
- 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.
- TOEFL scores for speakers of English as a 2nd language. The requirement may be waived for applicants who have completed a graduate or undergraduate degree at an accredited university in the United States or another institution where English is the primary language of instruction.

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](mailto: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:

- Search and offer by Medical Physics faculty mentor.
- Offer of employment received by postdoctoral fellow.
- Certificate program application is received and evaluated by Program admissions committee.
- Admission decision letter received by postdoctoral fellow.
- 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:

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

## 5. Admissions

Applications will be screened by the MEDP Admissions Committee. Complete application packages will be scored and ranked based on the merit of materials contained in the application. The major steps in the process of evaluation of applications are:

- Incomplete applications will be returned to the applicant without review.
- 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.
- Applicants are deemed eligible for admission upon a simple majority of “For” votes
- 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 Interactions & Transport
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:	MEDP-4210	Radiographic Anatomy
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.

## 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.

## D. Disclosures

### 1. CAMPEP Disclosures

The Commission on Accreditation of Medical Physics Education Programs (CAMPEP) requires a public disclosure posting if a Program is found to be out of compliance with CAMPEP standards. Compliance issues could include curriculum, admissions procedures, and other operational issues. In the (unexpected) event that this Program is found to be non-compliant, the disclosure statement will be posted on the Program website at <https://www.lsu.edu/physics/graduate-programs/medical-physics/disclosures.php>.

### 2. Federally-Mandated Disclosures

The following information is disclosed in accordance with requirements of the US Government. The information here is also posted on the Program website at <https://www.lsu.edu/physics/graduate-programs/medical-physics/disclosures.php>.

**Degrees:** “MS in Medical Physics and Health Physics (Medical Physics Option)”, “PhD in Physics (Medical Physics)”, and “Post-Doctoral Certificate Program”

- Provide a list of all states for which the program’s curriculum meets the educational requirements for professional licensure;  
*TX, NY, HI, and FL. In addition, PA and MA are targeting future licensure.*
- Provide a list of all states for which the program’s curriculum **does not** meet the educational requirements for professional licensure; and  
*None.*
- Provide a list of all states for which the program has not made a determination of whether the curriculum meets the educational requirements for professional licensure.  
*ID, MT, WY, OK, and GA.*

**Degree:** “MS in Medical Physics and Health Physics (Health Physics Option)”

- Provide a list of all states for which the program’s curriculum meets the educational requirements for professional licensure;  
*None. We are unaware of any state that provides professional licensure in health physics.*
- Provide a list of all states for which the program’s curriculum **does not** meet the educational requirements for professional licensure; and

*None. We are unaware of any state that provides professional licensure in health physics.*

- Provide a list of all states for which the program has not made a determination of whether the curriculum meets the educational requirements for professional licensure.

*None. We are unaware of any state that provides professional licensure in health physics.*

**All Degrees:**

- Our curricula satisfy the educational requirements for **professional board certification** in medical physics and in health physics in all states of the United States.
- Students may file a complaint (after going through the grievance policies of the institution) to SACS sent via ground mail to:

President  
Southern Association of Colleges and Schools Commission on  
Colleges  
1866 Southern Lane  
Decatur, GA 30033-4097

and to the state authorization agency (if a distance education student and are unable to resolve the complaint through the grievance policies of the institution)

Louisiana Board of Regents  
P.O. Box 3677  
Baton Rouge, LA  
70821-3677  
ATTN: SARA Student Complaints



### III. Graduate Assistantships

#### A. Funding

The goal of the Medical Physics and Health Physics Program is to provide student funding through graduate assistantships to students. This is typically a period of up to 2 years and 2 semesters for M.S. in medical physics students when enrolled full-time. The typical period for Ph.D. students is 5-6 years. Students in the M.S. in health physics program will be supported as funds are available, typically for a period of up to 2 years.

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:

- a bachelor's degree in Physics or equivalent technical degree
- 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. Typical annual stipend rates are listed below (data listed are current as of Fall 2024).

Degree	Service Assistantship	Teaching Assistantship	Research Assistantship*
MS	Generally, not applicable	\$26,000 for 9-month academic year	\$26,000 for 9-month academic year
PhD	Generally, not applicable	\$32,000 for 12 months	\$32,000 for 12 months

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

LSU defines graduate assistantships as 50% effort, which is a commitment of 20 hours per week. This means that a student on a graduate assistantship is obligated to the source of funds to provide 20 hours of professional service each week. The source of funds is the Department for Teaching Assistantships. For Research Assistantships, the research advisor is the typical source of funds. The remaining effort each week should be devoted by the student to their academic and research training, including time spent on coursework and thesis or dissertation research.

#### 1. Assistantship Descriptions

Information on graduate assistantships is available online from the Graduate School and in LSU Policy Statements. Provided here are brief descriptions of each type of assistantship.

#### 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:

- grade homework and exams for assigned courses and maintain written records of all grades earned by students in consultation with the course instructor
- proctor for tests, including mid-term and final exams, which may be given at various times and locations about the campus
- work in the Physics & Astronomy tutoring center
- provide support for lecture setup and demonstrations
- 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:

- prepare and present a brief lecture/ review to introduce each laboratory procedure
- supervise students in performance of procedures to ensure safety, completeness, and accuracy of results
- grade laboratory reports and mid-term and final exams
- proctor for tests, including mid-term and final exams, which may be given at various times and locations about the campus
- attend meetings scheduled by the supervisor
- work in the Physics & Astronomy tutoring center.

## TEACHING ASSISTANTSHIPS (Medical Physics M.S. Year 2)

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.

## 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.

### B. 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; however, most graduate fees have recently been eliminated per State law. To qualify for a nonresident fee waiver and/or tuition exemption, students must be employed on an assistantship on or before the following dates: March 1<sup>st</sup> for spring, July 1<sup>st</sup> for summer, and October 1<sup>st</sup> 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. Student Work Hour Guidelines

Students are expected to be present in their designated work areas (e.g., on-campus, at MBPCC, or at PBRC) during designated working hours (typically 9:00 AM to 5:00 PM). Exceptions lunch break, medical appointments, and other approved leave.

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.

### C. Student Health Insurance Plan

The Graduate School has recently started offering health insurance. Follow the link below for the most up to date information: <https://www.gallagherstudent.com/students/student-home.php?idField=1357>.

## **IV. Course Schedules, General Catalog, and Academic Calendar**

### **A. General Catalog**

The LSU General Catalog (<https://www.lsu.edu/academics/catalogs.php>) is the master repository of the university's academic rules and regulations, courses, and related information. A student is typically governed by the active catalog for the year of matriculation; a student can elect to follow a newer catalog – consult the Program Director and Department Graduate Advisor with questions.

### **B. Academic Calendar**

The university's Academic Calendar is posted at <https://www.lsu.edu/registrar/academics/academic-calendars/index.php>. The calendar lists key dates related to registration deadline, beginning and end of semesters, holidays, and other events.

### **C. Course Offerings**

Courses offered each semester are listed at <http://appl101.lsu.edu/booklet2.nsf/mainframeset>. Most medical physics and health physics courses are offered annually; some classes may be offered each semester or may occur only in alternate years. Course offerings and instructor assignments may vary from year to year, depending on availability of faculty, student interest, and other factors.

### **D. Schedule Booklet and Final Exam Schedule**

Students and course directors are expected to follow the University's posted final examination schedules. Following the official schedule minimizes scheduling conflicts with exams from other courses, TA duties, and program-related activities. The Schedule Booklet (for class registration) and Final Examination schedules for each academic year are available at <https://lsu.edu/registrar/academics/schedule-booklet/>. University policies for rescheduling exams in the case of a conflict are posted with the Final Exam schedule information.

## v. Policies and Procedures

### A. Safety and Security

#### 1. 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

#### 2. LSU EMERGENCY TEXT MESSAGE SYSTEM

LSU provides an emergency text message system. LSU also uses emails and postings on the university website to convey emergency information and campus status. To sign-up for the text message system:

- 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.

#### 3. BUILDING

- Doors should be closed and locked when a room is unoccupied for any length of time.
- Keys are assigned to the student by Department office staff in the 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).

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

- As a general rule, discourage propping open the hallway doors, especially because the hallway door is the only barrier to most student desks. Most doors are equipped with a toggle on the lock mechanism that can be used to unlock the door while still keeping it closed.
- 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. Err on the side of caution.

- If you are sitting in an interior office with a closed door, consider keeping the hallway door closed and locked since you are not watching traffic in the area.
- 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.
- 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.

#### **4. 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.

#### **5. RADIATION SAFETY**

- Radiation Safety Office website: <https://www.lsu.edu/radiation-safety>
- Radiation safety orientations and training will occur within MEDP 4331 Radiation Protection and Exposure Evaluation and MEDP 4352 Radiation Detection Laboratory.
- If a student will work with radioactive sources or radiation producing, training resources and application forms are available on the RSO website. Research supervisors are responsible for ensuring that training is completed.
- In case of a radiation accident or spill, secure the area and notify the Radiation Safety Office (225-578-2008).
- Radiation and radioactive materials shall not be used or transported without the supervision of a faculty member and approval of the Radiation Safety Officer.

### **B. Record Keeping**

The program, department, and other units at LSU are required to keep student records for a variety of purposes, including monitoring progress, reporting, and analysis. When submitting records, students should always submit records through the Program Office – specifically to the Program Manager. The Program Manager will assist with transmitting documents to another unit, such as the Graduate School, as necessary, ensuring that copies are placed into Program records.

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:

- Scanned records should be provided only in PDF format.
- Name files appropriately, e.g., “2020-10-13-leave-request-form-jones-v01.pdf”.
- For multipage records, concatenate all pages into a single file.
- When submitting electronic records by email, use the Program's office email office ([pamedphys@lsu.edu](mailto:pamedphys@lsu.edu)). This facilitates prompt processing, even when one or more staff are on leave or otherwise unavailable.

## 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:

- Copying from another student's test paper or assignment;
- Allowing another student to copy from a test paper or assignment;
- 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;
- 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;
- 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;
- 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;
- Stealing, buying, or otherwise obtaining through unauthorized access, all or part, including answers, of an unadministered test;
- Seeing or giving away all or part of an unadministered test, including answers to an unadministered test;
- Bribing any other person to obtain an unadministered test or information about an unadministered test;
- Substituting for another student, or permitting any other person to substitute for oneself, to take a test;
- 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;
- 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;
- 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;
  - 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;
  - 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;
  - 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;
  - 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;
  - Attempting to commit or assisting someone in the commission or attempted commission of an offense listed above.

## **1. 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.

## **2. 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.

## **3. 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.

## **4. 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.

## **D. 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 space in 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 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.

Copy Machines

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.

### **3. Phone Utilization**

The campus has migrated to Teams telephones for University-owned phones. Students will typically use their personal cell phones for on- and off-campus communication.

## **E. 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.

- 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.



- When scheduling the committee events
  - 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.
  - 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.
  - 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.
- Send reminders by email to committee members and their administrative assistants.
  - One calendar week prior to the event
  - One business day prior to the event
  - Include the date, time, location, and offer to provide a map upon request (or just provide it).
  - 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 for a breakdown in communication.
- If teleconferencing or videoconferencing is planned,
  - 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.
  - 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.
  - 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.
  - 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.
- 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.

## **F. 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 other sites for some 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](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 behave 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. Students are not required to be at work on weekends or when the university is closed for business. Students, like faculty, are expected to be at work when the university is open for business, *even if classes are not in session*. The University calendar specifies official holidays and university closures. Taking leave in excess of allowed amounts is not an issue, so long as the behavior does not become chronic and work-related duties (e.g., TA duties, class, meetings) are not adversely impacted. The Program tracks student leave primarily for safety and security, with no intention to unreasonably hinder medical appointments, time spent visiting family, or general well-being.

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 notified; please also notify the Program Manager and/or Program Director. 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://www.lsu.edu/policies/ps/ps\\_22.pdf](https://www.lsu.edu/policies/ps/ps_22.pdf)).

For all leave, please complete the leave form (blank forms are located in the appendix of this handbook). Submit the form to the Program Manager at LSU. 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; each full workday you will be away counts as 8 hours of leave. Do not include weekends or LSU holidays. You can round partial days to the hour or to a half or full day.

### **2. Types of Leave**

#### **Sick Leave**

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

#### **Holiday Leave**

Holiday leave days are those days specified as holidays for students, faculty, and staff by LSU. The holidays are listed in the LSU academic calendar.

## **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 (1<sup>st</sup> year students) or your supervisor (2<sup>nd</sup> 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.

## **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.

## **G. Training Resources**

### **1. LSU Mandatory Annual Training**

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 details at

[https://www.lsu.edu/hrm/employees/employee\\_resources/training\\_and\\_development/mandatory\\_training.php](https://www.lsu.edu/hrm/employees/employee_resources/training_and_development/mandatory_training.php)

### **2. LSU Research Training**

LSU uses the CITI system for research-related training. Available training modules include Responsible Conduct of Research, IRB, and IACUC. Completion of some training modules will occur within the context of the ethics & professionalism topics in MEDP 7995 seminar. Extramural funding agencies such as NIH and NSF may require specific training as part of grant-funded research; research supervisors will provide relevant information as needed.

LSU's Environmental Health and Safety Office provides generalized lab safety training through EHSAssistant. Training resources can be accessed at <https://www.lsu.edu/ehs/training/ehs-assistant.php> and <https://www.lsu.edu/ehs/training/online-lab-safety.php>.

Radiation safety training is managed by the LSU Radiation Safety Office. Study modules, information and forms are available at <https://www.lsu.edu/radiation-safety>.

### 3. 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.

- Safety Orientation for Healthcare “Preparation Meets Opportunity”
- Successful Service Recovery Encounters – Making it Right in Healthcare
- 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.

## H. Travel Policies

### 1. Workday

LSU uses a business enterprise software platform called Workday. This platform is used for many different things including Travel. Workday is used to create Spend Authorizations before a trip, as well as Expense Reports after a trip. For additional details regarding travel, contact the Program Manager and Physics Department staff in Room 202 Nicholson. They can assist with conference registration, booking flights and hotel reservations prior to a trip, as well as filing an expense report for reimbursement after the trip. LSU has specific travel rules which must be followed – get help, don’t try to make these arrangements on your own!

### 2. Spend Authorization

Spend (driving, travel) authorization using personal vehicles is not required for routine Program/Department-related business. This includes both LSU-based faculty and 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.)

When traveling on university business away from Baton Rouge, especially when travel reimbursement will be sought, a spend authorization must be filed prior to travel, even if you do not plan to request reimbursement. Spend authorizations are required for graduate students even if another entity (e.g., MBPCC or PBRC) provides reimbursement.

### 3. Expense Report

Expense reports must be filed in a timely fashion following travel. Expense reports are filed

through Workday and must be linked to the prior spend authorization. The Program Manager and Department staff should be consulted to make sure the expense report is completed properly.

## **I. Professional Society Memberships**

All Program students should join professional societies pertaining to their program of study and research interests and maintain membership through graduate training. Most societies provide student memberships at reduced or no cost. 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.

### **American Association of Physicists in Medicine (AAPM)**

Membership Type: Student Membership

Annual Dues: \$44 with an initial \$25 application fee. Dues waived for 1<sup>st</sup> 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>

### **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/>

### **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/>

### **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?](https://radres.site-ym.com/general/register_member_type.asp?)

## American College of Radiology

The American College of Radiology provides free member-in-training memberships.  
<https://www.acr.org/Member-Resources/membership>

## J. 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. Because the forms change occasionally, always obtain the most recent versions of forms from the Program website, the Program Manager or Director, or Department staff.

### 1. MEDP-7991, 7992, 7999

- Student identifies an instructor willing to take on the responsibility.
- Student contact the Associate Departmental Chair (Dr. Dana Browne) with the request ([browne@phys.lsu.edu](mailto:browne@phys.lsu.edu)). It would be best to give as much advance notice as possible.
- 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.
- The instructor and student must sign and date the form.
- 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:
- Student obtains a permission form (see recent example form on following pages) from the Graduate Student Coordinator.
- Student fills out the form.
- Instructor (major professor) signs the form and sends it to the Graduate Student Coordinator.
- Graduate Student 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. <i>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</i> 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.
<b>Description of Project:</b> 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. <i>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</i> 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.
<b>Description of Project:</b> 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) <i>Prereq.: MEDP 4111 or 7331 and consent of instructor.</i> 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.
<b>Description of Project:</b> 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	

## **K. Letters of Recommendation 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

- Your thesis advisor: focuses on applicant's strengths, attributes, and potential.
- The Program Director or Deputy Program Director: focuses on your strengths and attributes relative to your peers and the goals of the MS/PhD training programs.
- Another faculty member who can speak to strengths of relevance to residency and career as a clinical physicist, such as the Clinical Rotations course director.

### Sequence of Steps

- First, take the time to properly prepare your entire packet. See the checklist below.
- Speak with your advisor to identify the best letter writers for your particular case.
- 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).

### Information that you should provide to letter writers

- Application information
- 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.
- To whom the letter should be addressed (or not, in the case of MP-RAP letters)
- The deadline for the submission of the letter.
- The CV or biographical sketch that plan to include in your application, which typically includes a statement of career goals, information about your thesis or dissertation, and dates & results about any board certification examinations that you have taken.
- An academic plan that includes your anticipated defense and degree-completion dates.
- A draft of the cover letter or personal statement that you plan to submit in the application.

### Tips

- The faculty are supportive of you and your career progress; your letters are also testimonials about you. This means that you should ask for letters from those who are best able to advance your application. Consult your research supervisor, the Program Director, or other faculty for advice about the choices of letter writers. Err on the side of more communication than less.
- Request letters and provide relevant information with sufficient time prior to the submission deadline – weeks in advance, not days! Keep in mind that some faculty may be writing letters for multiple students.
- Attend residency fairs, especially virtual fairs.
- 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

*Note: This information may not be up-to-date. Notify the Program Manager and Director if you find outdated or erroneous information.*

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*.

To use these resources, you will need to sign up for an HPC account ([https://accounts.hpc.lsu.edu/login\\_request.php](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, your HPC account will also give you access to regular classes for learning about how to use the clusters (<http://www.hpc.lsu.edu/training/index.php>). To access these resources, you will need software to allow remote 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.

### 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 Library Resources

### 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/>)

### LSU Library's Online Resources

Note: This information may not be up-to-date. Notify the Program Manager and Director if you find outdated or erroneous information.

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

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.

NCRP reports as full PDFs are available to AAPM members. NCRP reports also can be obtained

(for free) from the LSU Libraries as *individual sections* in PDF format from Knovel. The procedure is:

- Start at the LSU home page, [www.lsu.edu](http://www.lsu.edu)
- Click on: Quick Links → LSU Libraries → Go
- Click on: Resources → Databases
- Click on: By Title → K
- Click on: Knovel
- (Login with your myLSU ID and password, if prompted)
- Click on: Safety & Industrial Hygiene → Radiation
- Search through the list for the desired report (the list is alphabetical)
- Click on the desired report
- 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.

- go to the LSU Libraries site, select Databases, select Web of Science
- search on "ICRP 106" (or whatever title you want) -- you may want to refine the search strictly for the journal "Annals of the ICRP"
- Browse to the entry that you want.
- 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,

- Go to <http://atoz.ebsco.com/Search/491>
- 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](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](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:

- Navigate to page <https://lsu.edu/vetmed/library/index.php>
- Login with PAWS ID (works both on and off campus)
- Search for journal or resource in search box

To Access Physics in Medicine and Biology

- Direct Browser to <http://lib.lsu.edu>
- Select "Databases" in the box on the top left.
- Under "Databases by Subject" scroll and select "physics and astronomy"
- Scroll down the list of databases and select IOPscience
- If the MyLSU login screen appears, login with LSU username and password
- On the IOPscience website, select "Journals list" from the "Journals" dropdown navigation bar
- Select Physics in Medicine and Biology from the list of journals

### 3. 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	2004-2010 All documents are available electronically through the Graduate School website

#### 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
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 et 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	
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

#### 4. MBPCC Library Resources

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

#### 5. 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.

#### 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 is 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. 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 at any 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

<b>Student Disclosure and Release of Information</b>	
<b>Student Name (Please Print)</b> _____	<b>LSU ID Number (Required)</b> _____
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, <i>including financial, academic, and/or advising records</i> from the LSU Department of Physics and Astronomy.	
<i>Access granted to student education records via this form remains in effect until officially revoked by the student.</i>	
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.	
_____ <b>Student Signature (Required)</b>	_____ <b>Date</b>

<b>Revocation of the Release of Financial and/or Academic Information</b>	
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, <i>including financial, academic, and/or advising records</i> 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.	
_____ <b>Student Signature (Required)</b>	_____ <b>Date</b>

Program Manager (225)578-2163  
Assistant (225)215-1266 [pamedphys@lsu.edu](mailto:pamedphys@lsu.edu)

Administrative

Office Use Only: Received by: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_ Form MEDP-  
FERPA-1, Revised 11 Aug 2015

## B. 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 Manager.

Form MEDP-COURSEREQ-1, Revised 02 Aug 2019

### C. MS Supervisory Committee Membership Form

This can be found in the directory of program of faculty. Submit completed form to the Medical Physics Program Manager.

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.					

Signature of Committee Chair:

Date:

Signature of Program Director:

Date:

### D. Report of Supervisory Committee 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	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

To Be Completed by the Student

- Briefly review the research accomplishments of the student since the last meeting.
  
- What specific recommendations were made by the Committee for future research?
  
- 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**

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

- 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).

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

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

- 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:

## E. 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](mailto:gradsvcs@lsu.edu)

Name: \_\_\_\_\_

LSU Student ID: \_\_\_\_\_

Department: \_\_\_\_\_

Degree Type (MA, M.S.): \_\_\_\_\_

Official Major: \_\_\_\_\_

Official Minor: \_\_\_\_\_

#### Defense Information:

Defense Date/ Time: \_\_\_\_\_

Select One:

Thesis

Non-Thesis

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: \_\_\_\_\_

Page 2 of 2  
Updated 1/2019

#### Notes

- See <https://www.lsu.edu/graduateschool> for latest version of form.
- Membership guidelines for the Examination Committee are the same as for the Supervisory Committee (see guidelines elsewhere in the document).
- Submit completed form to MEDP program manager.

## F. PhD Supervisory Committee Request Form

Student Name:

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

## G. Request for General Exam and Degree Audit Form

**Pinkie Gordon Lane  
Graduate School**

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### Request for Doctoral General Defense and Degree Audit

This form must be submitted to The Graduate School *three weeks prior* to the defense. *Email submission to [gradsvcs@lsu.edu](mailto:gradsvcs@lsu.edu). Please ensure that your department receives a copy of this form.*

**Student Information:**

LSU Student ID: <input style="width: 100%;" type="text"/>	Defense Date: <input style="width: 100%;" type="text"/>
Name: <input style="width: 100%;" type="text"/>	Time & Place: <input style="width: 100%;" type="text"/>
Department: <input style="width: 100%;" type="text"/>	Previously Scheduled? <input style="width: 50px;" type="text"/>
Major: <input style="width: 100%;" type="text"/>	
Minor: <input style="width: 100%;" type="text"/>	

---

**Committee Information:**  
 The full advisory committee must comprise at least three members of the graduate faculty, including two faculty members from the student's major department, one of whom must be a full member of the graduate faculty. 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. **Co-Chair (if applicable) and Minor professor can be represented in any 'Member' line, if necessary. All General Examinations will be assigned a dean's representative who will serve at the final defense as well.**

**Committee Members** *(Print and Sign Names Below):*

Committee Chair:	<input style="width: 100%;" type="text"/>	<hr/>
Member:	<input style="width: 100%;" type="text"/>	<hr/>
Member:	<input style="width: 100%;" type="text"/>	<hr/>
Member:	<input style="width: 100%;" type="text"/>	<hr/>
Member:	<input style="width: 100%;" type="text"/>	<hr/>
Member:	<input style="width: 100%;" type="text"/>	<hr/>

---

**Please state area of research below (be as specific as possible):**

---

**For Office Use Only:**

GPA:	CW:	TIME:	REG:	COM:	MINOR:
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>

Page 1 of 3  
Updated 11/2023

Only a sample of the first page is shown. Additional notes:

- See [https://www.lsu.edu/graduateschool/students/files/student\\_forms/doctoral\\_general\\_defense\\_and\\_audit\\_2023.pdf](https://www.lsu.edu/graduateschool/students/files/student_forms/doctoral_general_defense_and_audit_2023.pdf) for latest version of form.
- Membership guidelines for the Examination Committee are the same as for the Supervisory Committee (see guidelines elsewhere in the document).
- Submit completed form to MEDP program coordinator.



## H. Request for Final Doctoral Examination Form

### LSU | Graduate School

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#### 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](mailto: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**

- See <https://www.lsu.edu/graduateschool> for latest version of form.
- Membership guidelines for the Examination Committee are the same as for the Supervisory Committee (see guidelines elsewhere in the document).
- 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 <i>APPLICATION FOR LEAVE</i>			
SECTION _____			
NAME _____	REQUESTS _____	HOURS OF LEAVE _____	
<input type="checkbox"/> ANNUAL	<input type="checkbox"/> SICK	<input type="checkbox"/> LEAVE WITHOUT PAY	
<input type="checkbox"/> COMPENSATORY	<input type="checkbox"/> OTHER	REMARKS _____	
BEGINNING _____	ENDING _____		
date                  time	date                  time		
* <i>I certify that my absence from duty was for the reason noted.</i>			
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)

Advisor

\_\_\_ Program Director notified main office staff (Paige Whittington) of the separation date. (This should be done two weeks prior to separation date). 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.

\_\_\_ 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

- **Contact Information:** Please provide your personal contact information so that we may reach you after you have completed your training with us. If you 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)	

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

Field	Check Box	
Residency Training Program	<input type="checkbox"/>	<input type="checkbox"/>
Clinical Position	<input type="checkbox"/>	<input type="checkbox"/>
Another Degree Program	<input type="checkbox"/>	<input type="checkbox"/>
Industry	<input type="checkbox"/>	<input type="checkbox"/>
Government	<input type="checkbox"/>	<input type="checkbox"/>
Still Seeking a Position	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

- **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:

- **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: \_\_\_\_\_

- ABR Track (choose one or more as applicable):

Diagnostic medical physics  Therapeutic medical physics  Nuclear medical physics

- 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? \_\_\_\_

- 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? \_\_\_\_

- 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

- 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 \_\_\_\_\_.

- 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: \_\_\_\_

## 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. & Section:	_____
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 [gradvc@lsu.edu](mailto:gradvc@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: \_\_\_\_\_  
(Vary with Department)

Concentration: \_\_\_\_\_

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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: \_\_\_\_\_

Page 1 of 1  
Updated 3/2019

### Notes

- All students in our program must submit this form.
- Submit at least one semester before your defense (MS students) or at time of your general exam (PhD students).
- 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.
- Download the latest version of form (fillable PDF) from <https://www.lsu.edu/graduateschool>.
- Complete the form electronically.
  - ï In the form, the Department is “Physics & Astronomy” for all students.
  - ï 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>.
  - ï 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”.
  - 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/students/grad\\_student\\_forms.php](https://www.lsu.edu/graduateschool/students/grad_student_forms.php)