FLORIDA ATLANTIC UNIVERSITY

NEW/CHANGE PROGRAM REQUEST
Graduate Programs

UGPC Approval _____
UFS Approval _____
Banner Posted _____
Catalog _____

Department PHYSICS

College CESCOS

Program Name
PROFESSIONAL SCIENCE MASTER IN MEDICAL PHYSICS

☐ **New Program**

☑ **Change Program**

Effective Date *(TERM & YEAR)*
FALL 2024

Please explain the requested change(s) and offer rationale below or on an attachment

The Professional Science Master in Medical Physics (PSMMP) is a 41 credit hours program that requires Thesis. It is one of the 58 accredited programs in the Nation and consists of core courses as required by the Commission on Accreditation of Medical Physics Programs (CAMPEP).
It also has one elective course of 3 credit hours that is not required by CAMPEP.

We propose to eliminate the elective course from the PSMMP to make it a 38 credit hours program.

The proposed reduction will increase the graduation rate while reducing the cost for the students.

Faculty Contact/Email/Phone

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Consult and list departments that may be affected by the change(s) and attach documentation

No effect on other departments by the proposed change..

Approved by	***Date***
Department Chair	5-22-24
College Curriculum Chair	Sept 23, 2024
College Dean	09/24/2024
UGPC Chair	10/02/2024
UGC Chair	10/02/2024
Graduate College Dean	10/03/2024
UFS President	
Provost	

Email this form and attachments to UGPC@fau.edu one week before the UGPC meeting so that materials may be viewed on the UGPC website prior to the meeting.

MEDICAL PHYSICS
PROFESSIONAL SCIENCE MASTER (P.S.M.)

(Minimum of ~~41~~ 38 credits required)

The Professional Science Master (P.S.M.) with major in Medical Physics degree is an interdisciplinary program that develops advanced scientific knowledge and professional skills. The program provides hands-on learning through on-site training. It aims to engage students with professional goals and help them become scientists uniquely suited to the 21st-century workplace.

Medical physics is an applied branch of physics devoted to the application of concepts and methods from physics to the diagnosis and treatment of human disease. A qualified medical physicist is competent to practice independently in one or more of the subfields (tracks) of medical physics.

The program requires ~~41~~ 38 credits. It provides professional training in partnership with area hospitals and concentrates on the medical physics radiation therapy track, which employs approximately 75 percent of the medical physicists.

Admission Requirements

In addition to meeting all of the University and College admission requirements for graduate study, applicants for the Medical Physics program must meet all of the following departmental requirements:

1. A B.S. or B.A. in Physics. Candidates with a B.S. in Biology, Chemistry, Computer Science or Engineering with a minor in Physics are considered;
2. At least a 3.0 (of a 4.0 maximum) GPA in science and mathematics courses;
3. Have taken the general GRE. No minimum score is required. (GRE scores more than five years old will not be accepted);
4. Approval from the Department of Physics.

Degree Requirements

Core Courses - 18 credits		
Radiation Biology	RAT 6204	3
Radiation Physics	RAT 6686	3
Radiation Therapy Physics	RAT 6628	3
Medical Imaging Physics	RAT 6616	3
Nuclear Medical Physics	RAT 6687	3
Radiation Protection and Safety	RAT 6310	3

Additional Required Courses - 20 credits		
Advanced Photon Beam Radiation Therapy	RAT 6629	3
Radiation Therapy: Clinical Practicum and Shadowing	RAT 6947	3
Shielding and Commissioning	RAT 6376	3
Seminar in Medical Physics	RAT 6932	1
Special Topics (such as Human Morphology and Function 1)	BSC 5931	3
Special Topics (such as Human Morphology and Function 2)	BSC 5931	3
Master's Thesis	RAT 6975	4
~~**Elective Course - 3 credits**~~ ~~***Choose one course from the following with advisor's approval.***~~		
~~Biostatistics~~	~~STA 5195~~	~~3~~
~~Computational Physics~~	~~PHZ 5156~~	~~3~~
~~Bioinformatics: Bioengineering Perspectives~~	~~BME 6762~~	~~3~~
~~Nonlinear Dynamic Systems~~	~~ISC 5453~~	~~3~~
~~Advanced Cell Physiology~~	~~PCB 6207~~	~~3~~
~~Tumor Immunology~~	~~PCB 6239~~	~~3~~
~~Special Topics~~ ~~(including Cell Structure and Function)~~	~~BSC 6936~~	~~3~~
~~Introduction to Biophysics~~	~~PHZ 5715~~	~~3~~
Total		~~41~~38

COMBINED PROGRAM
PHYSICS TO MEDICAL PHYSICS
BACHELOR OF SCIENCE (B.S.) TO PROFESSIONAL SCIENCE MASTER (P.S.M.) COMBINED PROGRAM

(Minimum of ~~161~~ 158 credits required)

This accelerated, five-year program leads to both a Bachelor of Science (B.S.) and a Professional Science Master (P.S.M.) degree. Students apply to the B.S./P.S.M. program in the first semester of their junior year and begin taking graduate courses after completion of their junior year (summer prior to senior year); those courses would apply to both the B.S. and P.S.M. degrees. The combined degree program is ~~161~~ 158 credits, 120 for the undergraduate degree and ~~41~~ 38 for the graduate degree. Students complete the undergraduate degree first. Up to 12 credits of graduate work taken in the senior year can be counted toward both the undergraduate and graduate degrees. Students must maintain a minimum GPA of 3.0 in upper-division and graduate courses. Because of the accelerated nature of the program, students should take the GRE by the end of their first year junior semester.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the General Education Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transition Guides.*

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Requirements and Eligibility

In addition to the University and Charles E. Schmidt College of Science requirements, students seeking a B.S. in Physics/P.S.M. in Medical Physics must complete the following courses.

Undergraduate Physics Core

Students are required to complete the introductory physics and mathematics sequences as well as an introductory natural science sequence outside the department as noted in the Undergraduate Physics Core. Students may opt for introductory sequences in either

biology or chemistry. The undergraduate advising committee may approve alternative sequences, even retroactively, on a case-by-case basis.\

To meet University degree requirements, students in any physics program must also complete 32 additional lower-division general education credits in courses outside the Charles E. Schmidt College of Science.

Curriculum

In addition to the Undergraduate Physics Core, B.S./P.S.M. candidates must complete the following required courses.

Upper Division Physics Courses		
Survey of Modern Physics	PHY 3101C	3
Classical Mechanics	PHY 3221	3
Electromagnetism 1	PHY 3323	3
Electromagnetism 2	PHY 3324	3
Statistical Physics	PHY 4523	3
Quantum Mechanics 1	PHY 4604	3
Physical Electronics	PHY 3722C	3
Undergraduate Laboratory 1	PHY 3802L	1
Undergraduate Laboratory 2	PHY 4803L	1
Third-Year Physics Seminar	PHY 3932	1
Computational Physics	PHZ 3151C	3
Mathematical Methods for Physics	PHZ 4113	3
Approved Electives		6
Total		**44**

Substitutions for required courses are allowed with prior approval from the department's undergraduate advising committee. Graduate courses are listed below.

Beginning in the first semester of their junior year, students may take Radiation Biology (RAT 6204, 3 credits). Then in the summer, they may take Seminar in Medical Physics (RAT 6932, 1 credit), Radiation Protection and Safety (RAT 6310, 3 credits) and Shielding and Commissioning (RAT 6376, 3 credits). In their senior year, they may take Radiation Physics (RAT 6686, 3 credits), Medical Imaging Physics (RAT 6616, 3 credit), Nuclear Medical Physics (RAT 6687, 3 credits) and one 5000-level elective (3 credits). This plan gives a total of 22 credits out of the 41 needed for the P.S.M. in Medical Physics program.

Graduate Courses		
Core Courses - 15 credits		
Radiation Biology	RAT 6204	3
Radiation Physics	RAT 6686	3

Radiation Therapy Physics	RAT 6628	3
Medical Imaging Physics	RAT 6616	3
Nuclear Medical Physics	RAT 6687	3
Additional Required Courses - 23 credits		
Radiation Protection and Safety	RAT 6310	3
Advanced Photon Beam Radiation Therapy	RAT 6629	3
Radiation Therapy: Clinical Practicum and Shadowing	RAT 6947	3
Shielding and Commissioning	RAT 6376	3
Seminar in Medical Physics	RAT 6932	1
Special Topics (such as Human Morphology and Function 1)	BSC 5931	3
Special Topics (such as Human Morphology and Function 2)	BSC 5931	3
Master's Thesis	RAT 6975	4
~~***Elective Course - 3 credits***~~ ~~***Choose one course from the following with advisor's approval.***~~		
~~Biostatistics~~	~~STA 5195~~	~~3~~
~~Computational Physics~~	~~PHZ 5156~~	~~3~~
~~Bioinformatics: Bioengineering Perspectives~~	~~BME 6762~~	~~3~~
~~Nonlinear Dynamic Systems~~	~~ISC 5453~~	~~3~~
~~Advanced Cell Physiology~~	~~PCB 6207~~	~~3~~
~~Tumor Immunology~~	~~PCB 6239~~	~~3~~
~~Special Topics (including Cell Structure and Function)~~	~~BSC 6936~~	~~3~~
~~Introduction to Biophysics~~	~~PHZ 5715~~	~~3~~
Total		~~41~~38