MEDICAL PHYSICS, CERTIFICATE IN (POST-BACCALAUREATE GRADUATE CERTIFICATE)

Program accreditation
Commission on Accreditation of Medical Physics Educational Programs (http://campep.org)

Program goals
The graduate certificate in medical physics offers course work in physics as it is applied to the diagnosis and treatment of human diseases. Required course work provides theoretical and practical training in radiation dosimetry, radiation biology, radiation therapy, imaging and health physics. The goal of the program is to provide a career path in medical physics as an alternative to a terminal degree in medical physics. The program is primarily designed for retraining those who possess a doctoral degree in physics or a related field.

The mission of the medical physics graduate certificate program is to serve the Virginia and the nation by helping to meet the demand for competent medical physicists in the health care delivery setting. The program is intended for postdoctoral individuals seeking to enhance their credentials for admission into a medical physics residency position.

Student learning goals
To develop core competency in medical physics by:

1. Obtaining a medical physics knowledge base
2. Enhancing medical physics-specific problem-solving skills
3. Enhancing clinically relevant communication skills

Student learning outcomes
1. Demonstrate appropriate written communication skills
2. Demonstrate appropriate oral and visual communication skills
3. Demonstrate satisfactory knowledge of the base of scientific information required to practice clinical medical physics
4. Demonstrate the ability to evaluate and integrate such knowledge into the solution of clinically relevant problems as measured by the course work
5. Demonstrate an appropriate level of skill in the identification of clinical medical physics problems and the design and implementation of appropriate problem-solving methods and solutions as measured by course work

VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs
The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website (http://www.gradle.vcu.edu) and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Degree candidacy requirements
A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master’s or doctoral status according to the degree candidacy requirements of the student’s graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student’s faculty regarding the student’s academic achievements and the student’s readiness to proceed to the final research phase of the degree program.

Graduation requirements
As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Other information
The medical physics graduate program student handbook (https://medicalphysics.vcu.edu/handbook/StudentHandbook.pdf) is available on the Medical Physics website.

School of Medicine graduate program policies
The School of Medicine provides policies applicable to all programs administratively housed in the school.

Admission requirements
<table>
<thead>
<tr>
<th>Degree</th>
<th>Semester(s) of entry</th>
<th>Deadline dates:</th>
<th>Test requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>Fall</td>
<td>Jan 15</td>
<td>GRE</td>
</tr>
</tbody>
</table>
In addition to the general admission requirements of the VCU Graduate School (http://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements) and the School of Medicine, students are expected to satisfy the following minimum standards for admission.

1. Students must have a minimum of 30 credit hours in undergraduate physics, physical science or engineering, of which at least 18 credit hours must be at the upper level. Background courses should include calculus one and two, linear algebra, differential equations, modern physics, and electricity and magnetism physics.

2. Students must submit satisfactory GRE scores.

3. Applicants must present a minimum GPA of 3.0 on a 4-point scale for the undergraduate degree or most recently completed graduate degree.

4. Doctorate degree in physics, engineering, or other area of physical science.

Students are required to complete the 22 credit hours of the core graduate medical physics course work (MEDP 561, MEDP 563, MEDP 567, MEDP 601, MEDP 630, MEDP 635, MEDP 636) plus one credit hour of MEDP 689.

**Curriculum requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDP 561</td>
<td>Topographical Anatomy and Physiology</td>
<td>1</td>
</tr>
<tr>
<td>MEDP 563</td>
<td>Radiological Physics and Radiation Dosimetry</td>
<td>4</td>
</tr>
<tr>
<td>MEDP 567</td>
<td>Introduction to Radiation Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>MEDP 601</td>
<td>Health Physics</td>
<td>3</td>
</tr>
<tr>
<td>MEDP 630</td>
<td>Radiobiology for the Medical Physicist</td>
<td>3</td>
</tr>
<tr>
<td>MEDP 635</td>
<td>Physics of Diagnostic Imaging</td>
<td>3</td>
</tr>
<tr>
<td>MEDP 636</td>
<td>Physics of MRI</td>
<td>3</td>
</tr>
<tr>
<td>MEDP 637</td>
<td>Physics of Nuclear Medicine</td>
<td>2</td>
</tr>
<tr>
<td>MEDP 689</td>
<td>Medical Physics Literature Review</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

**Total graduate course credit hours required (minimum)**

23 credits

**Graduate program director**

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**Program website:** medicalphysics.vcu.edu (http://www.medicalphysics.vcu.edu)