MASTER OF SCIENCE IN RADIOLICAL HEALTH SCIENCES, PLAN A, HEALTH PHYSICS SPECIALIZATION

Health physics is the discipline associated with using radiation for the benefit of society. This includes applying scientific as well as practical knowledge in order to obtain these benefits without unreasonable risks to humans or the environment. The profession has evolved into a necessary part of all programs that involve radiation, including anything from naturally occurring radioactivity to man-made sources of radiation. Sources of radiation range from naturally occurring radioactivity to reactors. Successful persons in health physics have broad backgrounds in physics, biology, instrumentation and have an understanding of risks and risk analysis.

Required course work is structured to provide a sound foundation in the basic skills essential to the health physics profession. Students may concentrate on specific areas of interest through a wide selection of elective courses. Formal course work is supplemented by extensive laboratory exercises, field trips and research.

The M.S. in Radiological Health Sciences, Health Physics Specialization is accredited by the Applied Sciences Accreditation Commission of ABET (http://www.abet.org).

Requirements

Effective Fall 2017

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ERHS 530</td>
<td>Radiological Physics and Dosimetry I</td>
<td>3</td>
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<tr>
<td>ERHS 531</td>
<td>Nuclear Instruments and Measurements</td>
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<tr>
<td>ERHS 550</td>
<td>Principles of Radiation Biology</td>
<td>3-5</td>
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<tr>
<td>or ERHS 450</td>
<td>Introduction to Radiation Biology</td>
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<td>ERHS 561</td>
<td>Radiation Public Health</td>
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<tr>
<td>ERHS 563</td>
<td>Environmental Contaminant Modeling I</td>
<td>2</td>
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<tr>
<td>or ERHS 570</td>
<td>Radioecology</td>
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<td>ERHS 630</td>
<td>Radiological Physics and Dosimetry II</td>
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<td>ERHS 632</td>
<td>Techniques in Radiation Dosimetry</td>
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<td>ERHS 665</td>
<td>Radiochemistry</td>
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<tr>
<td>ERHS 693D</td>
<td>Research Seminar: Health Physics</td>
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<td>ERHS 786</td>
<td>Practicum</td>
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<td>Select one of the following courses:</td>
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<tr>
<td>ERHS 544/</td>
<td>Biostatistical Methods for Quantitative</td>
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<td>STAT 544</td>
<td>Data</td>
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<tr>
<td>ERHS 555</td>
<td>Quantitative Methods for Radiation Safety</td>
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<td>STAT 511A</td>
<td>Design and Data Analysis for Researchers I:</td>
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<td>R Software</td>
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<tr>
<td>STAT 511B</td>
<td>Design and Data Analysis for Researchers I:</td>
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<td>SAS Software</td>
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<td>Select at least 3 credits from the following:</td>
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<tr>
<td>ERHS 446</td>
<td>Environmental Toxicology</td>
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<td>ERHS 502</td>
<td>Fundamentals of Toxicology</td>
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<tr>
<td>ERHS 515</td>
<td>Non-Ionizing Radiation Safety</td>
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ERHS 520 Environmental and Occupational Health Issues
ERHS 526 Industrial Hygiene Laboratory
ERHS 555 Quantitative Methods for Radiation Safety
ERHS 556 Monte Carlo Methods in Health Physics
ERHS 563 Environmental Contaminant Modeling I
ERHS 570 Radioecology
ERHS 698 Research
ERHS 726 Aerosols and Environmental Health
STAT 512 Design and Data Analysis for Researchers II

STAT 547/CIVE 547 Statistics for Environmental Monitoring

Thesis
ERHS 699 Thesis 3

Program Total Credits: 32-35

1 ERHS 555, ERHS 563 and ERHS 570 may only be used from the list if they have NOT been previously selected for the preceding requirements.