RADIOLOGICAL HEALTH SCIENCES / PRE-MEDICAL PHYSICS
College of Health and Human Sciences

HLTH-BS
RHMP
120 credits

Student: _____________________________ PUID: _____________________________ Catalog Term: ______

Additional Majors: __________________________________________________ Minors: ____________________________________________________________

Radiological Health Sciences/Pre-Medical Physics Core (University Foundational Learning Outcomes) (27-29 credits)

____ (4-3) ENGL 10600 First-Year Composition or ENGL 10800 Accelerated First-Year Composition [Written Communication] and [Information Literacy]

____ (3) COM 11400 Fundamental of Speech Communication or COM 21700 Science Writing & Presentations [Oral Communication]

____ (4) BIOL 11000 Fundamentals of Biology I [Fulfills 1 Science Core Course]

____ (4) BIOL 11100 Fundamentals of Biology II [Fulfills 1 Science Core Course]

____ (3) [Humanities] – select course from University list

____ (3) [Behavior/Social Science Humanities] – select course from University list

____ (4-5) MA 16100* Plane Analytic Geometry & Calculus I or MA 16500* Analytic Geometry & Calculus I [Quantitative Reasoning]

____ (3) [Science, Technology & Society] – select from HSCI Science, Technology & Society Core List

Required Courses for Radiological Health Sciences/Pre-Medical Physics (84-85 credits)

____ (4) BIOL 20300 Human Anatomy & Physiology

____ (4) BIOL 20400 Human Anatomy & Physiology

____ (4) CHM 11500 General Chemistry

____ (4) CHM 11600 General Chemistry

____ (3) English Selective – select from list

____ (2) HSCI 10100 Introduction to Health Sciences Professions

____ (3) HSCI 20200 Essentials of Environmental, Occupational, and Radiological Health Sciences

____ (3) HSCI 31200* Radiation Science Fundamentals

____ (2) HSCI 31300 Principles of Radiation Detection & Measurement

____ (2) HSCI 51400* Radiation Instrumentation Laboratory

____ (3) HSCI 52600 Principles of Health Physics & Dosimetry

____ (3) HSCI 54000* Radiation Biology

____ (3) HSCI 57000* Introduction to Medical Diagnostic Imaging

____ (3) HSCI 57200* Radiation Oncology Physics

____ (2) HSCI 57400* Medical Health Physics

____ (4-5) MA 16200* Plane Analytic Geometry & Calculus II or MA 16600* Analytic Geometry & Calculus II

____ (4) MA 26100 Multivariate Calculus

____ (4) MA 26200 Linear Algebra & Differential Equations

____ (3) Math-Computer Sciences Selective – select from list

____ (4) PHYS 17200* Modern Mechanics

____ (3) PHYS 24100 Electricity & Optics

____ (1) PHYS 25200 Electricity & Optics Laboratory

____ (3) Physics Selective – must be PHYS 30000 or higher **

____ (3) Physics Selective – must be PHYS 30000 or higher **

____ (1) PHYS 34000 Modern Physics Laboratory

____ (3) PHYS 34200 Modern Physics

____ (3) Radiological Health Sciences Selective – select from list

____ (3) STAT 30100 Elementary Statistical Methods

HSCI Humanities, Behavioral/Social Sciences Selectives – select from list (3 credits)

____ (3) select course from HSCI Humanities, Behavioral/Social Sciences list

Electives (3-6 credits)

____ ( ) ____________ ( ) ____________ ( ) ____________ ( ) ____________

*A grade of “C” or higher must be earned in HSCI 31200, HSCI 51400, HSCI 54000, HSCI 57000, HSCI 57200, HSCI 57400; MA 16100/16200 or MA 16500/16600; and PHYS 17200.

An Ethics course (such as PHIL 11100 Ethics, PHIL 27000 Biomedical Ethics, or PHIL 29000 Environmental Ethics) is highly recommended.

**Suggested physics selectives are PHYS 31000 Intermediate Mechanics, PHYS 36000 Quantum Mechanics, and/or PHYS 55600 Introductory Nuclear Physics.

All students must complete 32 credits of 300 level or higher courses at Purdue for graduation.

120 credits required for Bachelor of Science degree

Revised 5/2013
University Foundational Learning Outcomes List: https://www.purdue.edu/provost/initiatives/curriculum/course.html

**HSCI Science, Technology & Society Core List**

- BCHM 10000 Intro to Biochemistry
- EAPS 10000 Planet Earth
- EAPS 11300 Introduction to Environmental Science
- EAPS 12000 Introduction to Geography
- HONR 19901 First-Year Honors in Science, Technology & Society
- HSCI 20100 Principles of Public Health
- NRES 29000 Introduction to Environmental Science
- PHIL 27000 Biomedical Ethics
- STAT 11300 Statistics and Society
- TECH 12000 Technology and the Individual

**Continued: Radiological Health Sciences Selective List**

- HSCI 155200 Introduction to Aerosol Science
- HSCI 156000 Toxicology
- HSCI 158000 Occupational Ergonomics
- PHIL 27000 Biomedical Ethics
- PHIL 29000 Environmental Ethics
- PHIL 35000 Philosophy and Probability
- PHYS 22000 General Physics
- PHYS 22100 General Physics
- PHYS 31000 Intermediate Mechanics
- PHYS 36000 Quantum Mechanics
- PHYS 55000 Introduction to Quantum Mechanics
- PHYS 55600 Introductory Nuclear Physics
- PHYS 56400 Introduction to Elements Particle Physics
- PHYS 56500 Introduction to Elementary Particle Physics II
- AT 57200 Human Error

**HSCI Humanities, Behavioral/Social Sciences Selectives List**

- select any course(s) from the following subjects:
- Anthropology (ANTH)
- Art & Design (AD)
- Classics (CLCS)
- Communication (COM)
- Dance (DANC)
- Economics (ECON)
- English (ENGL)
- Foreign Languages & Literatures (FLL)
- History (HIST)
- Interdisciplinary Studies (IDIS)
- Music (MUS)
- Philosophy (PHIL)
- Political Science (POL)
- Psychology (PSY)
- Sociology (SOC)
- Theatre (THTR)

**English Selective List**

- ENGL 23000 Great Narrative Works
- ENGL 26600 World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 World Literature: From 1700 A.D. To The Present
- ENGL 30400 Advanced Composition
- ENGL 30600 Introduction To Professional Writing
- ENGL 42000 Business Writing
- ENGL 42100 Technical Writing

**Math-Computer Sciences Selective List**

- CS 15800 C Programming
- CS 15900 Programming Applications for Engineers
- CS 18000 Programming I
- CS 31400 Numerical Methods
- CS 47800 Introduction to Bioinformatics
- MA 26200 Linear Algebra and Differential Equations
- MA 41600 Probability
- MA 52700 Advanced Mathematics for Engineers and Physicists I
- MA 52800 Advanced Mathematics for Engineers and Physicists II
- PHYS 58000 Computational Physics
- STAT 31100 Introductory Probability
- STAT 50300 Statistical Methods for Biology
- STAT 51100 Statistical Methods
- STAT 51200 Applied Regression Analysis

**Radiological Health Sciences Selective List**

- CHM 22400 Introductory Quantitative Analysis
- CHM 25500 Organic Chemistry
- CHM 25501 Organic Chemistry Laboratory
- CHM 25600 Organic Chemistry
- CHM 25601 Organic Chemistry Laboratory
- CHM 33300 Principles of Biochemistry
- HSCI 34500 Introduction To Occupational And Environmental Health Science
- BIOL 41500 Introduction To Molecular Biology
- BIOL 44400 Human Genetics
- BIOL 54200 Animal Cell Culture
- BIOL 56100 Molecular Biology Of Cancer
- HK 44500 Principles of Epidemiology
- HSCI 54700 Environmental Epidemiology
- HSCI 55100 Health Effects of Non-ionizing Radiation
### Freshman Year - First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 11000</td>
<td>BIOL 11000</td>
<td>4</td>
<td>Fundamentals of BIOL I (4)</td>
</tr>
<tr>
<td>CHM 11500</td>
<td>CHM 11500</td>
<td>4</td>
<td>General Chemistry I (Science)</td>
</tr>
<tr>
<td>HSCI 10100</td>
<td>HSCI 10100</td>
<td>2</td>
<td>Intro to HSCI Professions</td>
</tr>
<tr>
<td>MA 16100/16500</td>
<td>MA 16100</td>
<td>2-5</td>
<td>Plane Analytic Geometry &amp; CALC I (Quant. Reasoning)</td>
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</tbody>
</table>

**Total Credits:** 14-15

**Credit Hours to Date:** 14-15

**Fall only:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>ENGL 10600</td>
<td>ENGL 10600</td>
<td>4</td>
<td>Freshman Composition (Written Communication &amp; Info Literacy)</td>
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**Total Credits:** 14-15

**Credit Hours to Date:** 28-29

### Sophomore Year - Third Semester

<table>
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<tbody>
<tr>
<td>COM 11400</td>
<td>COM 11400</td>
<td>3</td>
<td>Fundamentals of Speech or COM 21700 Science Writing &amp; Presentation (Oral Communication)</td>
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<tr>
<td>HSCI 20200</td>
<td>HSCI 20200</td>
<td>3</td>
<td>Elective</td>
</tr>
<tr>
<td>MA 26100</td>
<td>MA 26100</td>
<td>3</td>
<td>Multivariate Calculus (Quant. Reasoning)</td>
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<tr>
<td>PHYS 17200</td>
<td>PHYS 17200</td>
<td>3</td>
<td>Modern Mechanics (MA 16200/16600) (Science)</td>
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</table>

**Total Credits:** 12-13

**Credit Hours to Date:** 40-41

**Fall only:**

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<th>Course</th>
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<th>Credits</th>
<th>Notes</th>
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<tbody>
<tr>
<td>COM 21700</td>
<td>COM 21700</td>
<td>3</td>
<td>Science Writing &amp; Presentation (Oral Communication)</td>
</tr>
<tr>
<td>PHYS 24100</td>
<td>PHYS 24100</td>
<td>3</td>
<td>Electricity and Optics (Science)</td>
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<tr>
<td>PHYS 25200</td>
<td>PHYS 25200</td>
<td>1</td>
<td>Electricity and Optics Lab</td>
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</table>

**Total Credits:** 12-13

**Credit Hours to Date:** 52-53

### Fourth Semester

<table>
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<th>Course</th>
<th>Code</th>
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<tbody>
<tr>
<td>MA 26200</td>
<td>MA 26200</td>
<td>4</td>
<td>Linear Algebra and Diff Equations (Quant. Reasoning)</td>
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<tr>
<td>PHYS 25200</td>
<td>PHYS 25200</td>
<td>1</td>
<td>Electricity and Optics Lab</td>
</tr>
<tr>
<td>STAT 30100</td>
<td>STAT 30100</td>
<td>3</td>
<td>Elem. Statistical Methods (Info. Literacy)</td>
</tr>
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</table>

**Total Credits:** 4

**Credit Hours to Date:** 56-57

### Note:

- All students must complete 32 hours of 300 level or higher courses at Purdue for graduation.
- Responsibility for completing graduation requirements is solely that of the student.
### Junior Year - Fifth Semester

<table>
<thead>
<tr>
<th>Sem/Yr</th>
<th>Grade</th>
<th>Subject and Course Code</th>
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<tbody>
<tr>
<td>4</td>
<td></td>
<td>BIOL 20300 Human ANAT &amp; Physiology I</td>
<td>(Science)</td>
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<td></td>
<td>Fall only</td>
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<tr>
<td>3</td>
<td></td>
<td>HSCI 31200* Radiation Science Fund.</td>
<td>(PHYS 17200 or NUCL 20000 &amp; MA 16200/16600)</td>
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<tr>
<td></td>
<td></td>
<td>Fall only</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>HSCI 31300* Prncpls of Rad Dectn &amp; Mesrmnt</td>
<td>(PHYS 17200 or NUCL 20000 &amp; MA 16200/16600)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fall only</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Humanities Selective</td>
<td>(Select from University list)</td>
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<tr>
<td>3</td>
<td></td>
<td>PHYS 30000 or higher PHYS Elective</td>
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**Note:**
- Suggested physics electives are PHYS 310 - Intermediate Mechanics, PHYS 360 - Quantum Mechanics and/or PHYS 556 - Introductory Nuclear Physics
- *A grade of 'C' or higher must be earned in HSCI 312, 313, 314, 526, 520, 570, 572, and 574 and MA 161/162 or MA 163/166.

### Sixth Semester

<table>
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<tr>
<th>Sem/Yr</th>
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<th>Subject and Course Code</th>
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</thead>
<tbody>
<tr>
<td>4</td>
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<td>BIOL 20400 Human ANAT &amp; Physiology II</td>
<td>(Science)</td>
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<td></td>
<td>Spring only</td>
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<tr>
<td>3</td>
<td></td>
<td>HSCI 34000* Radiation Biology</td>
<td>(HSCI 31200 &amp; BIOL 1100)</td>
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<td></td>
<td></td>
<td>Spring only</td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td>HSCI 34000* Radiation Instrumentation Lab</td>
<td>(HSCI 31200)</td>
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<tr>
<td>3</td>
<td></td>
<td>Math and Computer Science Elective</td>
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<tr>
<td>3</td>
<td></td>
<td>PHYS 34200 Modern Physics</td>
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### Senior Year - Seventh Semester

<table>
<thead>
<tr>
<th>Sem/Yr</th>
<th>Grade</th>
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<tr>
<td>0-2</td>
<td></td>
<td>Elective</td>
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<tr>
<td>3</td>
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<td>HSCI 32600* Principles of Health Physics and Dosimetry</td>
<td>Fall only</td>
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<tr>
<td>3</td>
<td></td>
<td>HSCI 57000* Intro to Medical Diagnostic Imaging</td>
<td>Spring only</td>
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<tr>
<td>2</td>
<td></td>
<td>HSCI 57400* Medical Health Physics</td>
<td>Fall only</td>
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<tr>
<td>3</td>
<td></td>
<td>**Humanities Elective</td>
<td>(Behavior/Soc. Science)</td>
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<tr>
<td>3</td>
<td></td>
<td>PHYS 30000 or higher PHYS Elective</td>
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<tr>
<td>1</td>
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<td>PHYS 3400 Modern Physics Lab</td>
<td>[13]</td>
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### Eighth Semester

<table>
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<tr>
<td>3</td>
<td></td>
<td>English Elective</td>
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<tr>
<td>3</td>
<td></td>
<td>HSCI 57200* Radiation Oncology Physics</td>
<td>Spring only</td>
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<td></td>
<td>Humanities Elective</td>
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<tr>
<td>3</td>
<td></td>
<td>Rad. Health Sciences Elective</td>
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**Note:**
- **Selected courses only; please see your advisor**

Revised: 09/28/2013