

Student: _____ PUID: _____ Catalog Term: _____

Additional Majors: _____ Minors: _____

Radiological Health Sciences/Health Physics Emphasis 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) HSCI 20100 Principles of Public Health Science **[Science, Technology & Society]**

Required Courses for Radiological Health Sciences/Health Physics Emphasis (87-88 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*
- ___ (3) _____ General Science or Radiological Health Sciences Selective – *select from list*
- ___ (3) _____ Health Physics Selective – *select from list*
- ___ (3) _____ Health Physics 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 53400* Applied Health Physics
- ___ (3) HSCI 54000* Radiation Biology
- ___ (2) HSCI 57400* Medical Health Physics
- ___ (3) _____ Math-Computer Science Selective – *select from list*
- ___ (4) _____ Math-Computer Science or General Science Selective - *select from list*
- ___ (4-5) MA 16200 Plane Analytic Geometry & Calculus II or MA 16600 Analytic Geometry & Calculus II
- ___ (4) MA 26100 Multivariate Calculus
- ___ (3) NUCL 20000 Introduction to Nuclear Engineering
- ___ (2) NUCL 20500 Nuclear Engineering Undergraduate Laboratory I
- ___ (2) NUCL 30500 Nuclear Engineering Undergraduate Laboratory II
- ___ (4) PHYS 17200 Modern Mechanics
- ___ (3) PHYS 24100 Electricity & Optics
- ___ (1) PHYS 34000 Modern Physics Laboratory
- ___ (3) PHYS 34200 Modern Physics
- ___ (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 (0-3 credits)

___ () _____ ___ () _____ ___ () _____ ___ () _____

***A grade of "C" or higher must be earned in HSCI 31200, 31300, 51400, 52600, 53400, 54000, and 57400.**

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

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

120 credits required for Bachelor of Science degree

University Foundational Learning Outcomes List:

<https://www.purdue.edu/provost/initiatives/curriculum/course.html>

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

General Science Selective List

- AT 57200 Human Error
- 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 51600 Molecular Biology Of Cancer
- HK 44500 Principles of Epidemiology
- HSCI 54700 Environmental Epidemiology
- HSCI 55100 Health Effects of Non-ionizing Radiation
- HSCI 55200 Introduction to Aerosol Science
- HSCI 56000 Toxicology
- HSCI 58000 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

Health Physics Selective List

- HSCI 39000 Radiological Emergency Management
- HSCI 48500 Health Physics Internship
- HSCI 54700 Environmental Epidemiology
- HSCI 55100 Health Effects of Non-ionizing Radiation
- HSCI 55200 Introduction to Aerosol Science
- HSCI 59000 Public Health Law and Policy
- ME 20000 Thermodynamics I
- ME 27000 Basic Mechanics I
- NRES 28000 Hazardous Waste Handling
- NUCL 30000 Nuclear Structure and Radiation Interactions
- NUCL 31000 Introduction to Neutron Physics
- NUCL 35000 Nuclear Thermal-Hydraulics I
- NUCL 35100 Nuclear Thermal-Hydraulics II
- NUCL 50100 Nuclear Engineering Principles
- NUCL 50300 Radioactive Waste Management
- NUCL 50400 Nuclear Engineering Experiments
- NUCL 51000 Nuclear Reactor Theory I

Math-Computer Science 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 51200 Applied Regression Analysis

Radiological Health Sciences Selective List

- Any course on the Health Physics Selective List
- HSCI 19000, 29000, 39000, 49000, 59000 - Special Topics in Radiological Health Sciences
- HSCI 57000 Introduction to Medical Diagnostic Imaging
- HSCI 57200 Radiation Oncology Physics
- HSCI 69000 Molecular Radiobiology
- NUPH 41200 Diagnostic Imaging I
- NUPH 41300 Diagnostic Imaging II
- NUPH 41400 Nuclear Pharmacy Laboratory
- NUPH 53000 Applied Nuclear Pharmacy
- NUPH 55000 Introduction to Positron Emission Tomography

**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)

Name _____
 PUID _____

School of Health Sciences (HSCI)
RADIOLOGICAL HEALTH SCIENCES/HEALTH PHYSICS EMPHASIS

Minor(s) _____

RADH
120 credit hours required
Effective: Fall 2014 Beginners

Freshman Year	First Semester	Sem/Yr	Grade
BIOL 11000 (4) (S)*	Fundamentals of Biology I		
CHM 11500 (4) (S)*	General Chemistry I (MA 154, 158, 159, or calculus placement)		
COM 11400 (3) or COM 21700 (3)** (OC)*	Fundamentals of Speech Communication or Science Writing and Presentation (Oral Communication)		
HSCI 10100 (2)	Intro to Health Science Professions Fall only		
MA 16500 (4) or MA 16100 (5) (QR)*	Plane Analytic GEOM & CALC I** (ALEKS = 85)		
Total Credits = 17 - 18			

	Second Semester	Sem/Yr	Grade
BIOL 11100 (4) (S)*	Fundamentals of Biology II (BIOL 11000)		
CHM 11600 (4) (S)*	General Chemistry II (CHM 11200 or CHM 11500)		
ENGL 10600 (4) or ENGL 108 (3) *** (WC,IL)*	First-Year English Composition or Accelerated First-Year Composition		
MA 16600 (4) or MA 16200 (5) (QR)*	Plane Analytic GEOM & CALC II** (MA 16500 or 16100)		
Total Credits = 15 - 17			

Sophomore Year	Third Semester	Sem/Yr	Grade
BIOL 20300 (4) (S)*	Human Anatomy & Physiology I Fall only		
HSCI 20200 (3) (STS)*	Essentials of EH, OH and RH Fall only (3 credits in BIOL & CHM)		
MATH 26100 (4) (QR)*	Multivariate Calculus (MA 16200 or 16600)		
PHYS 17200 (4) (S)*	Modern Mechanics (MA 16100 or 16500 or ALEXS = 85)		
Total Credits = 15			

	Fourth Semester	Sem/Yr	Grade
BIOL 20400 (4) (S)*	Human Anatomy & Physiology II Spring only (BIOL 20300)		
HSCI 20100 (3) (STS)*	Principles of Public Health Sciences Spring only (Classification of at least 03)		
NUCL 20000 (3)	Intro to Nuclear Engineering Spring only (MA 16200 or 16600 & PHYS 17200)		
NUCL 20500 (2)	Nuclear Engineering Undergrad Lab I Spring only (NUCL 20000 co-req)		
Total Credits = 12			

***These courses are usually completed during the first/freshman year. However, they could be taken during summer or the sophomore year in order to decrease the credit load.

Junior Year	Fifth Semester	Sem/Yr	Grade
HSCI 31200 (3)	Radiation Science Fundamentals** Fall only (MA 16600 or 16200 & PHYS 17200)		
HSCI 31300 (2)	Principles of Rad. Detection & Measurement ** Fall only (MA 16600 or 16200 & PHYS 17200)		
NUCL 30500 (2)	Nuclear Engineering Undergrad Lab II Fall only (NUCL 20500)		
PHYS 24100 (3) (S)*	Electricity & Optics (PHYS 17200)		
STAT 30100 (3) (IL)*	Elem. Statistical Method		
Humanities Sel. (3) (BSS)*	(Select from University list)		
Total Credits = 16			

	Sixth Semester	Sem/Yr	Grade
HSCI 51400 (2)	Radiation Instrumentation. Lab** Spring only (HSCI 31200)		
HSCI 54000 (3)	Radiation Biology** Spring only (BIOL 11100 & HSCI 31200)		
PHYS 34200 (3)	Modern Physics (PHYS 24100)		
PHYS 34000 (1)	Modern Physics Lab (PHYS 24100) (PHYS 34200 co-req)		
Humanities Sel. (3) (H)*	(Select from University list)		
English Selective (3)			
Total Credits = 15			

Senior Year	Seventh Semester	Sem/Yr	Grade
HSCI 52600 (2)	Principles of HP & Dosimetry** Fall only (HSCI 31200)		
HSCI 57400 (2)	Medical Health Physics** Fall only (HSCI 31200 & MA 26100 & PHYS 241)		
MA/CS Selective (3)	(Select from MA/CS selective list)		
Health Physics Sel. (3)	(Select from Health Physics selective list)		
Health Physics Sel. (3)	(Select from Health Physics selective list)		
Elective (1-4)			
Total Credits = 14-17			

	Eighth Semester	Sem/Yr	Grade
HSCI 53400 (3)	Applied Health Physics Spring only(HSCI 31200)		
MA/CS or General Science Selective (4)	(Select from MA/CS or Gen Science list)		
General Science or RADH Selective (3)	(Select from Gen Science or RADH list)		
HSCI Hum. Sel. (3)			
Total Credits = 13			

University Foundations Learning Outcome List

<http://www.purdue.edu/provost/initiatives/curriculum/course.html>

- *(BSS) Behavioral/Social Science - 1 course
- *(H) Humanities - 1 course
- *(OC) Oral Communication - 1 course
- *(QR) Quantitative Reasoning - 1 course
- *(S) Science - 2 courses
- *(IL) Information Literacy - 1 course
- *(STS) Science, Technology, & Society) - 1 course
- *(WC) Written Communication – 1 course

Purdue students must complete 32 credit hours of 300 level or above courses for graduation with a Bachelor of Science degree.

Student is responsible for completing and fulfilling all graduation requirements.

****A minimum grade of C must be earned in HSCI 312, 313, 514, 526, 534, 540, and 574.**