

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 30000 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
RADH

Minor(s) _____
RADH

120 credit hours required

Freshman Year	First Semester	Sem/Yr	Grade
BIOL 11000 (4) (S)*	Fundamentals of Biology I		
CHM 11500 (4) (S)*	General Chemistry I (MA 15400, 15800, 15900, or calculus placement) OR ALEKS = 75		
COM 11400 (3) or COM 21700 (3)**	Fundamentals of Speech Communication or Science Writing and Presentation (OC)*		
HSCI 10100 (2)	Intro to Health Science Professions Fall only		
MA 16500 (4) or MA 16100 (5)	Plane Analytic GEOM & CALC I** (ALEKS = 85) (QR)*		
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 10800 (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 = C-)		
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 = C-)		
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 sophomore year in order to decrease credit load.

Junior Year	Fifth Semester	Sem/Yr	Grade
HSCI 31200 (3)	Radiation Science Fundamentals** (MA 16600 or 16200 & PHYS 17200 or NUCL 20000)		
Fall only			
HSCI 31300 (2)	Principles of Rad. Detection & Measurement ** (MA 16600 or 16200 & PHYS 17200 or NUCL 2000)		
Fall only			
NUCL 30500 (2)	Nuclear Engineering Undergrad Lab II Fall only (NUCL 20500)		
PHYS 24100 (3) (PHYS 17200)	Electricity & Optics (S)*		
STAT 30100 (3)	Elem. Statistical Method (IL)*		
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 may be taken concurrently.		
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			

Purdue students must complete 32 credit hours of 30000 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 31200, 31300, 51400, 52600, 53400, 54000, and 57400.**

Radiological Health
5/2015

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