

SCHOOL OF PHARMACY

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Programs

- Pharmaceutical Sciences, M.A. (Non-Thesis Option) (<http://catalog.marshall.edu/graduate/programs-az/pharmacy/pharmaceutical-sciences-ma/>)
- Pharmaceutical Sciences, M.S. (Thesis Option) (<http://catalog.marshall.edu/graduate/programs-az/pharmacy/pharmaceutical-sciences-ms/>)
- Pharmacy, Dual Degree: Pharm.D. and M.B.A. (<http://catalog.marshall.edu/graduate/programs-az/pharmacy/pharmacy-pharmd-mba/>)
- Pharmacy, Dual Degree: Pharm.D. and M.P.H. (<http://catalog.marshall.edu/graduate/programs-az/pharmacy/pharmacy-pharmd-mph/>)
- Pharmacy, Pharm.D. (<http://catalog.marshall.edu/graduate/programs-az/pharmacy/pharmacy-pharmd/>)

Courses

Biomedical Research

BMR 601 Intro DNA, RNA & Proteins

3 Credit hours

A molecular and cell biological study of the structure and function of nucleic acids and proteins.

Grade Mode: Normal Grading Mode

BMR 602 Intro Cells and Metabolism

3 Credit hours

A molecular and cell biological study of the structure of cells and of cellular metabolism.

Grade Mode: Normal Grading Mode

BMR 603 Regulation Cell Function

2 Credit hours

An advanced molecular and cell biological study of cell metabolism and the regulation of cell function.

Grade Mode: Normal Grading Mode

BMR 604 Cell Basis of Disease

1 Credit hour

A molecular and cell biological study of the basis of diseases prevalent in Appalachia

Grade Mode: Normal Grading Mode

BMR 617 BMR Statistics Technique

3 Credit hours

An application-oriented course in statistical concepts and techniques aimed at prospective researchers in the biomedical sciences.

Grade Mode: Normal Grading Mode

BMR 628 Neuroscience I

3 Credit hours

To study and understand the structure and function of the nervous system and disorders of neuronal function.

Pre-req: BMR 600.

Grade Mode: Normal Grading Mode

BMR 629 Neuroscience II

3 Credit hours

To study and understand the structure and function of the nervous system and disorders of neuronal function.

Pre-req: BMR 628.

Grade Mode: Normal Grading Mode

BMR 631 Neurosci/DevBio Lit Review

1 Credit hour

Published articles in the neuroscience literature will be presented by all class members. Each presentation will include background introduction methods, results, and discussion of the neuroscience research.

Grade Mode: Credit/No Credit Grade Only

BMR 641 Molecular Development

3 Credit hours

An in-depth discussion of current literature in developmental biology with emphasis on early embryo development, morphogenesis, lineage determination and regulation of developmental process.

Pre-req: BIC 628.

Grade Mode: Normal Grading Mode

BMR 644 Research Conduct

1 Credit hour

Responsible conduct of research, including human subjects, live vertebrate animals, conflict of interest, mentor-mentee responsibilities, collaborative research, peer review, data management, research misconduct, and responsible authorship, with case discussions.

Grade Mode: Credit/No Credit Grade Only

BMR 651 Cancer Biology

4 Credit hours

An advanced graduate course on the core principles of initiation, progression, treatment and prevention of cancer, based on current literature. (PR: BMR 601, 602, 603, 604, and permission of instructor).

Pre-req: BMR 601 and BMR 602 and BMR 603 and BMR 604.

Grade Mode: Normal Grading Mode

BMR 652 Cancer Biol Colloquium

1 Credit hour

This is a mentored journal club for graduate students covering selected areas of current interest in cancer biology research.

Grade Mode: Credit/No Credit Grade Only

BMR 660 Communication Bio Sci I

1 Credit hour

Biomedical graduate students are trained to plan, prepare and deliver effective scientific presentations.

Grade Mode: Credit/No Credit Grade Only

BMR 661 Communication Bio Sci II

1 Credit hour

Biomedical graduate students are trained to plan, prepare and deliver effective scientific presentations.

Grade Mode: Credit/No Credit Grade Only

BMR 664 ORDRC Colloquium

1 Credit hour

A seminar course where published articles in the field of obesity and obesity-related diseases are presented and discussed.

Grade Mode: Credit/No Credit Grade Only

BMR 665 CDRC Colloquium

1 Credit hour

A seminar-style series that will focus on recent advances in topics related to cardiovascular disease.

Grade Mode: Credit/No Credit Grade Only

BMR 674 Teaching Practicum

1 Credit hour

Students gain experience in teaching using a variety of methods in a supervised setting.

Grade Mode: Credit/No Credit Grade Only

BMR 676 CBR Journal Club

1 Credit hour

Mentored journal club preparation with monthly presentation in cellular and molecular biology research.

Grade Mode: Normal Grading Mode

BMR 679 Special Problems **1 Credit hour**
Intensive study of a selected topic or problem. Emphasizes independent study.

Grade Mode: Credit/No Credit Grade Only

BMR 680 Seminar **1 Credit hour**
Study and discussion of current topics related to the Biomedical Sciences.

Grade Mode: Credit/No Credit Grade Only

BMR 681 Thesis **1-6 Credit hours**
Grade Mode: Credit/No Credit Grade Only

BMR 785 Intro to Research **1-6 Credit hours**
Directed research activities requiring a completed prospectus for an advanced research project, a written report, or a research thesis. A minimum of three (3) hours required for all M.S. candidates.

Grade Mode: Credit/No Credit Grade Only

BMR 882 Research **1-15 Credit hours**
Grade Mode: Credit/No Credit Grade Only

Pharmaceutical Sciences

MSPS 511 Grad Research Seminar **1 Credit hour**
This course lays the foundation in oral communication for graduate students in pharmaceutical sciences. It provides experience in scientific presentation with an emphasis on defense of data and interpretation.
Grade Mode: Normal Grading Mode

MSPS 512 Med Chem & Drug Disc **1 Credit hour**
This course gives an overview of drug discovery principles and techniques for the practicing medicinal chemist.
Grade Mode: Normal Grading Mode

MSPS 513 Biopharm 2 **1 Credit hour**
Topics include mechanisms immediate and sustained drug release in formulations; novel drug delivery systems; drug pre-formulation; the drug approval process; drug preparation, liberation, absorption and stability of dosage forms.
Grade Mode: Normal Grading Mode

MSPS 514 Resb Conduct Research **1 Credit hour**
This course will help graduate students in pharmaceutical science become familiar with the general ethical issues that will arise through the course of basic science research. This course will help graduate students understand how to conduct ethical research, identify and focus on unethical situations in research, and how to solve future unethical dilemmas that may arise in the workplace.
Grade Mode: Normal Grading Mode

MSPS 531 Regulatory Affairs **3 Credit hours**
An overview of USFDA's regulation on drug. Topics covered include pharmaceutical regulatory agencies and organizations around the world and their International Regulatory Audits for Pharma, International Conference on Harmonization (ICH) guidelines, Pharmacopoeias and national formulary, US Food and Drug Administration (USFDA): History of USFDA Law and Regulation, GLP, MMP, NDA, and ANDA.
Grade Mode: Normal Grading Mode

MSPS 542 Science Seminars **1 Credit hour**
This course will help graduate students in the pharmaceutical sciences learn the basics of scientific communication and how to critically evaluate scientific literatures. Students must complete four versions of this course for credit. For the first three course offering, the student will receive a "CR" (credit) or "NC" (no credit). Upon completion of the fourth version of the course the student will receive a letter grade.
Grade Mode: Normal Grading Mode

MSPS 581 Special Topics **1-3 Credit hours**
Special Topics
Grade Mode: Normal Grading Mode

MSPS 585 Independent Study **1-3 Credit hours**
Independent Study
Grade Mode: Normal Grading Mode

MSPS 586 Problem Report **1-3 Credit hours**
Problem Report
Grade Mode: Normal Grading Mode

MSPS 612 Pharm Analysis **1 Credit hour**
Pharmaceutical Analysis
Grade Mode: Normal Grading Mode

MSPS 613 Pharmacometrics Recitation **1 Credit hour**
Pharmacometrics recitation
Grade Mode: Normal Grading Mode

MSPS 632 Prod Dev by Quality Design **3 Credit hours**
Product Development by Quality by Design
Grade Mode: Normal Grading Mode

MSPS 699 Thesis **1-6 Credit hours**
Thesis
Grade Mode: Normal Grading Mode

Pharmacy

PHAR 511 Clinical Immunology **1 Credit hour**
Skills development in vaccine administration, patient counseling, and maintaining appropriate record management. The student will acquire knowledge regarding individual vaccines and the vaccination process. This knowledge will be reinforced through laboratory and simulation activities. Skill development will culminate with the student providing immunizations in patient settings.
Grade Mode: Normal Grading Mode

PHAR 521 Integrated Laboratory I **2 Credit hours**
This is a laboratory course to provide hands-on experience that complements didactic presentations in PHAR 531 and PHAR 532.
Pre-req: PHAR 531.
Co-req: PHAR 532
Grade Mode: Normal Grading Mode

PHAR 522 Fund Med Chem **2 Credit hours**
An introductory course providing the fundamental basics of drug action. Specifically, the course will cover the physicochemical properties of drugs, basic principles of medical chemistry and structure activity relationships, including drug-receptor interactions, theories of drug action and drug metabolism.
Grade Mode: Normal Grading Mode

- PHAR 531 Biopharmaceutics I** **3 Credit hours**
 Topics covered include the physicochemical principles of pharmacy, such as acid-base theory, solubility, physical states of drugs, thermodynamics, drug stability, excipients, surfactants, dispersions, polymers, drug delivery, chemical compatibility and interactions of drugs in various dosage forms.
Grade Mode: Normal Grading Mode
- PHAR 532 Biopharmaceutics II** **3 Credit hours**
 Topics covered include mechanisms of both immediate and sustained drug release in formulations involving solid and semi-solid systems; introduction to novel drug delivery systems; drug pre-formulation, the drug approval processes, and regulations governing the pharmaceutical industry; drug preparation, liberation, absorption and stability dosage.
Pre-req: PHAR 531.
Co-req: PHAR 521
Grade Mode: Normal Grading Mode
- PHAR 541 Pharmacy Practice I** **4 Credit hours**
 Begin professional development understanding the responsibilities of a registered pharmacist providing patient care. Professional conduct, personnel management, personal conduct, pharmacy calculations, immunizations, legal issues, and team dynamics are stressed.
Grade Mode: Normal Grading Mode
- PHAR 542 Immunology and Microbiology** **4 Credit hours**
 Topics covered include an introduction to the classification, morphology and physiology of microorganisms, primarily organisms that can cause human pathology, such as bacteria, viruses, fungi, protozoans, parasites, and worms; the body's immune response and mechanisms of defense at the cellular and humoral (molecular) level will also be covered in the context of pathogenic organisms, tissue transplants, and autoimmune disease.
Grade Mode: Normal Grading Mode
- PHAR 543 Pharmacy Practice II** **4 Credit hours**
 Continued professional development of the pharmacy practitioner. Sterile products, top 200 medications, laboratory values, SOAP notes, documentation, medication safety, patient counseling and technology, communication, and public service are stressed.
Pre-req: PHAR 541.
Grade Mode: Normal Grading Mode
- PHAR 544 Prin of Disease & Drug Action** **4 Credit hours**
 Topics covered include the concepts and mechanisms of the basic processes underlying disease and pathophysiology; the general principles underlying drug action and therapeutics, including receptor pharmacology, enzyme inhibition and pharmacology; the relationship between drug concentration at the target tissue and drug effect; and concepts in pharmacogenomics and pharmaceutical genetics as they relate to drug action, and individual variation in response to drug action, nutrition, and biochemical processes.
Grade Mode: Normal Grading Mode
- PHAR 545 Therapeutics I** **4 Credit hours**
 Students will learn about the therapeutic use, human physiology, pharmacologic and chemical properties of over-the-counter medication and non-medication interventions for both treatment and prevention of disease.
Pre-req: PHAR 541.
Grade Mode: Normal Grading Mode
- PHAR 546 Pharmaceutical Biochemistry** **4 Credit hours**
 This course is designed to provide biochemistry fundamentals to PharmD students. Topics covered include structures and properties of water and biomolecules (proteins, lipids, and nucleic acids), enzymes and enzyme kinetics, membranes, receptors, transporters, signaling, human metabolism, hormonal regulation of metabolism, and basics of genomics, gene regulation, and proteins synthesis. Examples of basic principles covered in this class will be illustrated by use of the top 200 drugs.
Grade Mode: Normal Grading Mode
- PHAR 611 Integrated Laboratory II** **1 Credit hour**
 Practical hands-on experience in modern scientific methods used in biochemistry, pharmaceuticals, pharmacology, pharmacometrics; and analytical methods employed to detect, characterize, and quantitate naturally occurring substances and drug molecules.
Grade Mode: Normal Grading Mode
- PHAR 612 Therapeutic Drug Dosing** **1 Credit hour**
 Application of the basic principles of pharmacokinetics and pharmacodynamics to practice settings. Simulation and case-based methods are used to allow integration of pharmacy practice and skills learned during the PHAR 631 course.
Grade Mode: Normal Grading Mode
- PHAR 621 Pharmacy Law & Ethics** **2 Credit hours**
 An applied analysis of federal and West Virginia state law and ethical standards in the practice of Pharmacy and Pharmaceutical Care.
Grade Mode: Normal Grading Mode
- PHAR 622 Drug Info & Comm Skills** **2 Credit hours**
 Topics covered include basic skills in obtaining and utilizing drug information references, and foundational skills required in patient counseling, such as, the Indian health method of counseling.
Grade Mode: Normal Grading Mode
- PHAR 631 Pharmacometrics** **3 Credit hours**
 Topics covered include the basic theory of pharmacokinetics and pharmacodynamics; process and mechanisms controlling the rate and extent of drug absorption and systemic availability; bioavailability and bioequivalence.
Grade Mode: Normal Grading Mode
- PHAR 632 PPM Leadership** **3 Credit hours**
 Provides students with a working knowledge of important and fundamental aspects of pharmacy practice leadership including, but not limited to: management, strategic planning, motivational theories, and employment issues.
Grade Mode: Normal Grading Mode
- PHAR 633 Patient Care Skills Lab** **3 Credit hours**
 Application of physical assessment, triage, patient counseling, and communication skills. Assessment of individual patient, acuity, responsible therapeutic plan, documentation, conflict resolution, and team building are stressed.
Grade Mode: Normal Grading Mode
- PHAR 634 PPM Finance** **3 Credit hours**
 The contemporary practice of pharmacy in the healthcare system as it fits into the business environment. Healthcare systems, pharmacoeconomics, planning, evaluating, and decision-making through financial report analysis/case study are stressed.
Grade Mode: Normal Grading Mode

- PHAR 635 Research Outcomes Patient Care 3 Credit hours**
The fundamentals of clinical and outcomes research will be discussed and applied to patient care. Students will gain an understanding of study design, research methods, statistical analysis, and pharmacotherapy.
Grade Mode: Normal Grading Mode
- PHAR 661 Therapeutics II 6 Credit hours**
This course discusses clinical microbiology and principles of anti-infective therapy as well as the pathophysiology, associated pharmacology, and therapeutic approaches to infectious diseases and conditions of the integumentary system.
Grade Mode: Normal Grading Mode
- PHAR 671 Therapeutics III 7 Credit hours**
Students will learn about the therapeutic use of medication and non-medication interventions for both treatment and prevention of cardiovascular diseases, renal diseases, pulmonary diseases, and associated electrolyte disorders.
Grade Mode: Normal Grading Mode
- PHAR 711 Med Therapy Management 1 Credit hour**
The student will learn to resolve medication-related problems to reduce costs and improve outcomes.
Grade Mode: Normal Grading Mode
- PHAR 712 Capstone Diabetes Care 1 Credit hour**
Diabetes care capstone.
Grade Mode: Normal Grading Mode
- PHAR 721 Therapeutics 7 2 Credit hours**
This course will emphasize the unique needs and differences in therapeutic recommendations for patients at the extremes of ages, diverse cultural backgrounds, and those with co-morbidities and other health conditions.
Grade Mode: Normal Grading Mode
- PHAR 722 PPM Patient Safety 2 Credit hours**
Further professional development in the management of patient safety policies and procedures. Areas covered include: robotics, medication reconciliation, discharge planning, risk management, and other methods of improving patient safety.
Grade Mode: Normal Grading Mode
- PHAR 731 Case Studies 3 Credit hours**
Students will apply the principles of patient care, practice management, and public health to drug therapy issues through student-centered, problem-based instructional processes.
Grade Mode: Normal Grading Mode
- PHAR 732 Clin Aspects Rx Meds 3 Credit hours**
A discussion of the clinical aspects of medications will be covered with an emphasis on 1) pharmaceutical calculations and 2) analysis of the differences between various drugs and drug classes.
Grade Mode: Normal Grading Mode
- PHAR 733 Residency Preparation 3 Credit hours**
This course will help to prepare the pharmacy student for completion of postgraduate training, exploring processes including research project design and execution, interviewing, residency applications, and professional development.
Grade Mode: Normal Grading Mode
- PHAR 734 Medications of Abuse 3 Credit hours**
This course discusses medications of abuse and their impact on society, reviews the history of substance use disorder relating them to current affairs and the impact on society.
Grade Mode: Normal Grading Mode
- PHAR 741 Ther-Endocrine 4 Credit hours**
Students will learn about the therapeutic use of medication and non-medication interventions for reproduction, and treatment and prevention of endocrine and genitourinary diseases.
Grade Mode: Normal Grading Mode
- PHAR 751 Neuro & Psychiatric Dis 5 Credit hours**
Students will learn treatment and prevention of neurological and psychiatric diseases including the physiology, pathophysiology, pharmacology and therapy. This course emphasizes the pharmacist as a health care provider.
Grade Mode: Normal Grading Mode
- PHAR 761 HemeOnc Nutrition Hepa MS 6 Credit hours**
Students will learn treatment/prevention of heme-onc, nutrition, hepatic and musculoskeletal diseases including the pathophysiology, pharmacology and therapy. This course emphasizes the pharmacist as a health care provider.
Grade Mode: Normal Grading Mode
- PHAR 781 Veterinary Pharmacy 3 Credit hours**
To instruct students in the administration, clinical pharmacology, clinical applications, diseases, medication safety and comparative dosing of veterinary medications that a pharmacist may encounter in the community pharmacy setting.
Grade Mode: Normal Grading Mode
- PHAR 801 Special Topics I 1-6 Credit hours**
An opportunity for individual students to gain advanced experiences in practice, research, or service. Students will identify mentor and jointly develop individualized learning outcomes and a learning plan.
Grade Mode: Normal Grading Mode
- PHAR 802 Special Topics II 1-6 Credit hours**
An opportunity for students to didactically explore advanced topics within the profession of pharmacy.
Grade Mode: Normal Grading Mode
- PHAR 811 Pharm Prac Exp I (IPPE 1) 1 Credit hour**
Grade Mode: Normal Grading Mode
- PHAR 812 Pharm Prac Exp II (IPPE II) 1 Credit hour**
Introduction to community pharmacy practice in a supervised setting. Students are exposed to the role and responsibilities of the community pharmacist; including effective communication, and application of laws governing pharmacy.
Grade Mode: Normal Grading Mode
- PHAR 813 IPPE 3 Community 2 1 Credit hour**
Builds on the foundation of the Community Pharmacy 1 experience. The student will demonstrate critical thinking and problem solving skills, topical compounding skills, and professional attitude and behaviors.
Grade Mode: Normal Grading Mode
- PHAR 814 Intro Phar Institutions 2 1 Credit hour**
Builds on the foundations of the Institutional Pharmacy 1 Experience. The student will demonstrate critical thinking and problem solving, document professional practice activities, and parenteral compounding abilities.
Grade Mode: Normal Grading Mode
- PHAR 815 Phar Prac Exp 5 IPPE 5 1 Credit hour**
Introduces pharmacist student to the ambulatory care setting. Student will demonstrate the ability to develop a therapeutic plan that includes the selection of appropriate drug therapy based on patient characteristics.
Grade Mode: Normal Grading Mode

PHAR 816 Inpatient Clinical Skills 1 Credit hour

Introduces the pharmacy student to the clinical skills in an institutional setting needed to be successful. Student will demonstrate appropriate drug dosing and drug selection based on patient characteristics.

Grade Mode: Normal Grading Mode

PHAR 817 Intro Phar Prac Exp IPPE 7 1 Credit hour

Students are exposed to the role and responsibilities of a pharmacy team leader, manager, or director and the application of management strategy, tools, and responsibilities.

Grade Mode: Normal Grading Mode

PHAR 818 Education IPPE 8 1 Credit hour

The Pharmacist Student will develop and present continuing education programs or active learning exercises, apply instructional as well as learning techniques, and demonstrate mentoring skills.

Grade Mode: Normal Grading Mode

PHAR 819 Long Care of Patient 1 Credit hour

This course will provide the student with pharmacy care of a patient over an extended period of time. Students will be exposed to the role and responsibilities of the pharmacist. The student will demonstrate knowledge of the medical regimen and an understanding of why the medical regimen was or was not modified over a period of time.

Grade Mode: Normal Grading Mode

PHAR 821 IPPE Institutional 2 Credit hours

The Introductory Pharmacy Practice Experience in Institutions is designed to allow the student to demonstrate knowledge and skill learned in the classroom while concurrently gaining understanding to the systems and function of the pharmacy in an institutional setting.

Grade Mode: Normal Grading Mode

PHAR 881 APPE 1-General Medicine 5 Credit hours

Provides students pharmacy experience in a clinical, inpatient, acute care and team-based environment. Students will be expected to utilize multiple abilities learned throughout the curriculum in order to collect patient-specific information, evaluate and monitor drug therapy, educate patients and/or caregivers, respond to drug information inquiries and function effectively within a team.

Grade Mode: Normal Grading Mode

PHAR 882 APPE 2-Amb Care/Prim Care 5 Credit hours

The Amb Care / Prim Care APPE provides students experience in an out-patient care clinically focused practice environment. Students will be expected to utilize abilities learned previously throughout the curriculum in order to perform the following tasks: collect patient-specific information, evaluate and monitor drug therapy, educate patients and caregivers, drug information tasks, and other requirements.

Grade Mode: Normal Grading Mode

PHAR 883 APPE 3-Advanced Community 5 Credit hours

This is a 5-week advanced pharmacy practice experience in a community pharmacy setting that focuses on enhancing a student's ability to provide patient-centered pharmacy care services such as disease management, medication therapy management, preventative health screening, immunizations, specialty compounding, patient education, or other advanced patient care activities.

Grade Mode: Normal Grading Mode

PHAR 884 APPE 4-Adv Institutional 5 Credit hours

This is a 5-week experiential rotation in an approved health system that prepares the student to function within integrated pharmacy services. Particular emphasis is placed on the preparation, distribution, and control of medications, medication monitoring, and the ability to communicate with other healthcare professionals. This rotation develops competence to function as a staff hospital pharmacist.

Grade Mode: Normal Grading Mode

PHAR 885 APPE 5-Geriatrics 5 Credit hours

This is a 5-week experiential rotation that focuses on provision of clinical pharmacy services in a variety of settings with a focus on care to the elderly population. These sites may include community pharmacies, specialty clinics, rehabilitation hospitals, skilled nursing facilities (SNFs), home-based consult services, and assisted living facilities (ALFs). A focus is placed on the interdisciplinary care of the geriatric patient.

Grade Mode: Normal Grading Mode

PHAR 886 APPE 6-Diverse Populations 5 Credit hours

This is a 5-week required advanced pharmacy practice experience in a community, ambulatory, or other pharmacy setting to a medically under-served population. Students will utilize a variety of skills obtained throughout the curriculum. A focus will be providing care in a culturally sensitive, compassionate, community-oriented, and effective way to a diverse, ethnic, rural, poor, and/or indigent population(s).

Grade Mode: Normal Grading Mode

PHAR 887 APPE 7 & 8-Electives 5 Credit hours

The APPE general elective(s) are 5-week experiential rotation(s) that will give the students the opportunity to participate in a variety of pharmacy practice experiences, depending on the rotation site and practice setting, related to direct patient care, supportive patient care, or not related to patient care. Students must complete 2 elective rotations.

Grade Mode: Normal Grading Mode

PHAR 891 Pharmacy Capstone 4 Credit hours

Pharmacy capstone experience where students are challenged to demonstrate acquisition of pharmacy skill, knowledge, and behavior competency.

Grade Mode: Normal Grading Mode

Public Health

PH 601 Intro Public Health 1 Credit hour

An introduction to public health, including its foundation and history, principles and characteristics of the discipline, professional roles, and individual career development and planning.

Grade Mode: Normal Grading Mode

PH 602 Public Health Biology 2 Credit hours

Reviews biological bases of public health issues, including principles of disease development, including genetics, oncogenesis, and immunology. May be waived for those holding appropriate degrees in biological or clinical sciences.

Grade Mode: Normal Grading Mode

PH 603 Intro to Rural Health 3 Credit hours

Introduction to the particular issues of rural health, both domestically in the U.S. and internationally.

Grade Mode: Normal Grading Mode

- PH 610 Intro to PH** **2 Credit hours**
This course introduces students to the field of public health, how it works, and provides students with an opportunity to become familiar with essential concepts and resources in public health.
Grade Mode: Normal Grading Mode
- PH 611 Epidemiology** **3 Credit hours**
An introduction to basic concepts of including risk, study design, and analysis. Students apply these techniques to examine outbreaks, and evaluate preventives, diagnostics and treatments.
Grade Mode: Normal Grading Mode
- PH 615 Health Sys Research** **3 Credit hours**
An introduction to research in public health. Students examine prerequisites to successful study, as well as issues including funding, protocol design, data management, analysis, collaboration, and publication.
Co-req: PH 611, PH 621
Grade Mode: Normal Grading Mode
- PH 616 Clinical Trials** **3 Credit hours**
An examination of methods and issues in conducting clinical research. Includes critical aspects of study design, protocol development, recruitment and consent, and assessment of outcomes.
Pre-req: PH 611 and PH 621.
Grade Mode: Normal Grading Mode
- PH 617 Meth Comp Study** **3 Credit hours**
Examination of methods to determine the relative value of preventive, diagnostic and treatment alternatives for efficacy, cost, and practical application. Models include meta-analysis, comparative effectiveness trials, and data mining.
Pre-req: PH 611 and PH 621.
Grade Mode: Normal Grading Mode
- PH 620 PH Issues** **2 Credit hours**
Provide practical situations and contemporary issues in public health where students apply knowledge and theoretical concepts from coursework, strengthen existing skills/analytic thinking, and apply public health core competencies.
Grade Mode: Normal Grading Mode
- PH 621 Statistical Methods I** **3 Credit hours**
Introduction to statistical principles and methods. Includes descriptive and inferential statistics. Students will gain experience in the use of SPSS software, and in the interpretation and communication of statistical tests.
Grade Mode: Normal Grading Mode
- PH 622 Statistical Methods II** **2 Credit hours**
Examination of procedures including multiple linear and logistic regression, survival analysis, advanced non-parametric tests, repeated measures. Students gain experience in the use of SAS software for data management and analysis.
Pre-req: PH 621.
Grade Mode: Normal Grading Mode
- PH 631 Environmental Health** **2 Credit hours**
Introduction to environmental health principles, practices and policy. Students gain knowledge of the study, assessment, prevention and mitigation of exposures adversely affecting health.
Pre-req: PH 621.
Grade Mode: Normal Grading Mode
- PH 641 Social Behavioral Aspects PH** **2 Credit hours**
Examination of the application of social and behavioral sciences in public health, with emphasis on behavioral theory and related mechanisms for effecting individual and group changes in health status.
Grade Mode: Normal Grading Mode
- PH 642 Health Communications** **2 Credit hours**
Students learn methods to communicate health information effectively with disparate groups, develop communications strategies appropriate to diverse content and audiences, and gain skill in utilizing innovative interactive media.
Grade Mode: Normal Grading Mode
- PH 650 MPH Practicum** **6 Credit hours**
To provide students with opportunity to apply concepts and knowledge from the MPH curriculum and demonstrate competency in the public health practice setting.
Grade Mode: Credit/No Credit Grade Only
- PH 651 Public Health Services** **2 Credit hours**
An introduction to public health management, planning, implementation and evaluation. Students gain an integrated understanding of public health resources and their effective utilization to improve health.
Grade Mode: Normal Grading Mode
- PH 653 Rural Health Addiction** **2 Credit hours**
Introduction to the public health issues of, and interventions for, alcohol, tobacco, and drug addiction in the Appalachian region, with a special emphasis on opioid addiction and drug overdose.
Grade Mode: Normal Grading Mode
- PH 655 Intro Health Policy** **2 Credit hours**
An introduction to legal and policy foundations of U.S. health care, including its delivery, regulation and financing. Students develop skills in policy analysis and formulation, and learn principles of advocacy.
Grade Mode: Normal Grading Mode
- PH 656 Topics in Health Policy** **3 Credit hours**
A study of current issues of health policy, including major issues of health reform. Students apply their skills to formulate, package, and present their own health policy proposal.
Grade Mode: Normal Grading Mode
- PH 657 Public Health Prog Eval** **3 Credit hours**
This course deals with the application of research methods to evaluate public health programs and health services.
Pre-req: PH 621 with a minimum grade of D.
Grade Mode: Normal Grading Mode
- PH 660 Environmental PH** **3 Credit hours**
This graduate course provides students with a broad knowledge base of environmental public health science by addressing the significance of the environment on human health and wellness.
Grade Mode: Normal Grading Mode
- PH 661 Chronic Disease** **3 Credit hours**
Examination of major chronic diseases including mechanisms of development, risk, diagnosis and interventional strategies. Scope of the course includes cardiovascular, respiratory and neurodegenerative disorders, as well as diabetes and cancer.
Grade Mode: Normal Grading Mode

<p>PH 662 Control of Inf Disease 3 Credit hours Examination of infectious diseases from a public health perspective, including strategies for prevention, treatment, control and eradication. Pre-req: PH 611. Grade Mode: Normal Grading Mode</p>	<p>PH 695 Research 3 Credit hours Student research project, under guidance of the faculty advisor. Student project may include work towards thesis. Pre-req: PH 611 and PH 621. Grade Mode: Credit/No Credit Grade Only</p>
<p>PH 663 Health Behavior 3 Credit hours This course introduces students to the models of health behavior as it applies to public health. Grade Mode: Normal Grading Mode</p>	<p>PH 696 Capstone 3 Credit hours Course provides a structured and mentored process for students to produce written and oral components of a capstone project on a selected topic or question. (PR: Prior or current PH 694 or PH 695) Pre-req: PH 694 (may be taken concurrently) or PH 695 (may be taken concurrently). Concurrent PR: PH 694 or PH 695 Grade Mode: Normal Grading Mode</p>
<p>PH 671 Community Health 3 Credit hours Students learn how to facilitate programs and capacity building to enable communities to identify and address health issues. Students gain training in surveying and interviewing, and in health impact assessment. Grade Mode: Normal Grading Mode</p>	
<p>PH 672 Global Health 3 Credit hours An introduction to global health, including examination of disparities, development. The roles of governments, NGOs and citizens are examined; and students gain experience in issue analysis and developing health strategies. Pre-req: PH 611. Grade Mode: Normal Grading Mode</p>	
<p>PH 678 Principles Epi in PH 3 Credit hours Basic epidemiology principles, concepts, and procedures useful in the surveillance and investigation of health-related states or events. It is designed for federal, state, local government and private sector health professionals responsible for disease control. Grade Mode: Normal Grading Mode</p>	
<p>PH 686 Health Information Technology 3 Credit hours An introduction to health information technology applications and issues, as well as the growing impact of advances in biotechnology on public health. Grade Mode: Normal Grading Mode</p>	
<p>PH 689 Community Outreach Health 3 Credit hours Applied and experiential course in designing and implementing a community health outreach project for the improvement of health in rural Appalachia. Grade Mode: Normal Grading Mode</p>	
<p>PH 691 Health Promo & Disease Prevent 3 Credit hours This graduate course provides students with a broad knowledge base of health promotion and disease prevention in public health. Grade Mode: Normal Grading Mode</p>	
<p>PH 692 Seminar 1 Credit hour Introduction to health science literature review and critique, as well as presentation of research and practicum reports. Grade Mode: Normal Grading Mode</p>	
<p>PH 693 Law and Ethics 3 Credit hours Introduction to the legal and ethical foundations of public health practice, including study of how individuals, practitioners, organizations and government address key issues. Grade Mode: Normal Grading Mode</p>	
<p>PH 694 Practicum 3 Credit hours Applied public health experience conducted under guidance of a faculty advisor and site preceptor, including a specific set of proposed project and learning objectives, and utilizing a community partner. Pre-req: PH 611 and PH 621 and PH 641 and PH 686 and PH 693. Attributes: No Textbook Required Grade Mode: Credit/No Credit Grade Only</p>	