

# School of Pharmacy

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## Courses

### [School of Pharmacy](#)

- [Phcy 100: Introduction to Pharmacy](#)
- [Phcy 400: Becoming a Pharmacist](#)
- [Phcy 401: Foundations of BioMolecular Sciences I](#)
- [Phcy 402: Foundations of BioMolecular Sciences II](#)
- [Phcy 411: Human Physiology/Pathophysiology I](#)
- [Phcy 412: Human Physiology/Pathophysiology II](#)
- [Phcy 421: Pharmaceutics and Calculations I](#)
- [Phcy 422: Pharmaceutics and Calculations II](#)
- [Phcy 431: Social and Administrative Pharmacy I](#)
- [Phcy 432: Social and Administrative Pharmacy II](#)
- [Phcy 441: Pharmacists' Patient Care Process I](#)
- [Phcy 442: Pharmacists' Patient Care Process II](#)
- [Phcy 451: Pharmacogenomics](#)
- [Phcy 452: Pharmacoinmunology](#)
- [Phcy 460: Personal and Professional Development I](#)
- [Phcy 461: Interprofessional Collaboration I](#)
- [Phcy 481: Pharmacy Practice Applications I](#)
- [Phcy 482: Pharmacy Practice Applications II](#)
- [Phcy 501: Infectious Diseases Intensive](#)
- [Phcy 502: Integrated Systems: Cardiovascular](#)
- [Phcy 503: Integrated Systems: Respiratory](#)
- [Phcy 504: Integrated Systems: Renal](#)
- [Phcy 505: Integrated Systems: Neuromuscular](#)
- [Phcy 506: Integrated Systems: CNS/Psych](#)
- [Phcy 507: Integrated Systems: Endocrine System](#)
- [Phcy 508: Integrated Systems: GI/Nutrition](#)
- [Phcy 509: Integrated Systems: DERM/EENT](#)
- [Phcy 550: Integrated Institutional IPPE](#)
- [Phcy 560: Personal and Professional Development II](#)
- [Phcy 561: Interprofessional Collaboration II](#)
- [Phcy 581: Pharmacy Practice Applications III](#)
- [Phcy 601: Multisystem Complex Patient Care I](#)
- [Phcy 602: Hematology/Oncology/Immunology](#)
- [Phcy 603: Integrated Genitourinary & Reproductive](#)
- [Phcy 604: Pediatrics and Geriatrics](#)
- [Phcy 605: Integrated Selective IPPE](#)
- [Phcy 606: Population and Rural Health](#)
- [Phcy 607: Practice Law Application](#)
- [Phcy 608: Multisystem Complex Patient Care II](#)
- [Phcy 650: Integrated Comm & Ambulatory IPPE](#)
- [Phcy 651: Integrated Inst & Specialty IPPE](#)
- [Phcy 660: Personal & Professional Development III](#)
- [Phcy 661: Interprofessional Collaboration III](#)
- [Phcy 681: Pharmacy Practice Applications V](#)
- [Phcy 682: Pharmacy Practice Applications VI](#)
- [TOCP 591: Transitions of Care Patient Care APPE](#)



## **Biomolecular Sciences**

- [BMS 321: Pathogenesis of Infectious Diseases](#)
- [BMS 343: Biochemical Foundations of Therapeutics](#)
- [BMS 344: Physiological Foundation of Therapeutics](#)
- [BMS 345: Anatomical Foundations in Human Health](#)
- [BMS 401: Honors Introduction to Cancer Research](#)
- [BMS 470: Antimicrobial Resistance Mechanisms](#)
- [BMS 471: Targeting Neurodegenerative Diseases](#)
- [BMS 472: Spanish for Pharmacists](#)
- [BMS 473: Medical Cannabis](#)
- [BMS 474: Pandemics and Society](#)
- [BMS 475: Molecular Basis of Future Medicines](#)
- [BMS 476: Intro to AI & Applications in Pharmacy](#)
- [BMS 601: Graduate Student Survival Strategies](#)
- [BMS 602: Techniques in BioMolecular Sciences](#)
- [BMS 605: Original Research Proposal BMS](#)
- [BMS 608: Scientific Writing for BioMolecular Scie](#)
- [BMS 610: Carbohydrates and Glycoconjugates](#)
- [BMS 641: BioMolecular Sciences Seminar](#)
- [BMS 643: BioMolecular Sciences Seminar](#)
- [BMS 651: Fundamentals of Pharmacognosy and Phytoc](#)
- [BMS 652: Regulation of Dietary Supplements](#)
- [BMS 653: Formulation and Manufacturing of Dietary](#)
- [BMS 654: Identification and Authentication of Die](#)
- [BMS 655: Pharmacology and Toxicology of Dietary S](#)
- [BMS 661: Cannabis Identification, Genomics, & Eng](#)
- [BMS 662: Cannabis Policy & Law Syllabus](#)
- [BMS 663: Formulation & Manufacturing of Cannabis](#)
- [BMS 664: Chemistry & Standardization of Cannabis](#)
- [BMS 665: Pharmacology & Toxicology of Cannabinoid](#)
- [BMS 697: Thesis](#)
- [BMS 725: Mass Spectrometry: Fundamentals](#)
- [BMS 767: Advanced Topics in Toxicology](#)
- [BMS 797: Dissertation](#)
- [Medc 317: Pharmacogenetics and Pharmacoimmunology](#)
- [Medc 318: Chemical and Biological Terrorism](#)
- [Medc 319: Computer-Aided Drug Design](#)
- [Medc 415: Chemical Neurosci. Prin. of Drug Abuse](#)
- [Medc 416: Intro to the Principles of Med Chem I](#)
- [Medc 417: Intro to the Principles of Med Chem II](#)
- [Medc 418: Neuroscience Principles of Drug Abuse](#)
- [Medc 419: Special Topics in Oncology](#)
- [Medc 501: Advanced Medicinal Chemistry I](#)
- [Medc 502: Advanced Medicinal Chemistry II](#)
- [Medc 503: Medicinal Chemistry Research Methodology](#)
- [Medc 507: Organic Chemistry of Drug Synthesis](#)
- [Medc 541: Problems in Medicinal Chemistry](#)
- [Medc 542: Problems in Medicinal Chemistry](#)
- [Medc 610: Selected Topics in Medicinal Chemistry](#)
- [Medc 630: Pharmaceutical Protein Design & Devel](#)
- [Medc 711: Intro to Computer-Aided Drug Design](#)
- [Medc 712: QSAR & AI for Drug Design](#)
- [Medc 713: Drugs Affecting the Nervous System](#)
- [Medc 714: Chemotherapeutic Agents](#)
- [Medc 718: Bioorganic Chemistry](#)
- [Phcg 320: Special Topics in Oceans & Human Health](#)
- [Phcg 329: Herbal Supplements & Alternative Therapy](#)
- [Phcg 422: Natural Product Derived Pharmaceuticals](#)
- [Phcg 425: Poisonous Plants and Mushrooms](#)



- [Phcg 426: Cancer Chemo - Targets and Discovery](#)
- [Phcg 427: Drug Discovery I](#)
- [Phcg 428: Drug Discovery II](#)
- [Phcg 450: Career/Achievements in BMS: Nat.Prod.Res](#)
- [Phcg 451: Probiotics in Pharmacy](#)
- [Phcg 541: Problems in Pharmacognosy](#)
- [Phcg 542: Problems in Pharmacognosy](#)
- [Phcg 545: Individual Study in Pharmacognosy Res](#)
- [Phcg 546: Individual Study in Pharmacognosy Res](#)
- [Phcg 550: Careers/Achievements in BMS](#)
- [Phcg 620: Selected Topics in Pharmacognosy](#)
- [Phcg 627: Natural Product Chemistry](#)
- [Phcg 628: Natural Product Chemistry](#)
- [Phcg 630: Advanced Topics](#)
- [Phcg 631: Analysis of Natural Product Drugs I](#)
- [Phcg 632: Analysis of Natural Product Drugs II](#)
- [Phcg 633: Analysis of Natural Product Drugs III](#)
- [Phcg 634: Biosynthesis of Plant Constituents](#)
- [Phcg 635: Introduction to Molecular Cell Biology](#)
- [Phcg 636: Fermentation Chemistry](#)
- [Phcl 202: Environmental Health Perspectives](#)
- [Phcl 340: Animal Cells: Testing New Drugs](#)
- [Phcl 341: Human Pathophysiology I](#)
- [Phcl 342: Human Pathophysiology II](#)
- [Phcl 345: Nutritional Pharmacology](#)
- [Phcl 346: Immunological Basis for Therapeutics](#)
- [Phcl 347: Introduction to Environmental Toxicology](#)
- [Phcl 348: Principles of Life Science Research](#)
- [Phcl 349: Specialized Topics in Environ. Health](#)
- [Phcl 351: Drugs and Human Performance](#)
- [Phcl 352: Case Studies in Immunology](#)
- [Phcl 381: Introduction to Toxicology](#)
- [Phcl 382: Fundamentals of Cancer](#)
- [Phcl 440: Physiologic Case Study for Therapeutics](#)
- [Phcl 441: Pharmacology: Novel Drugs in Clin Trials](#)
- [Phcl 442: Clinical Toxicology](#)
- [Phcl 443: Basic and Clinical Pharmacology I](#)
- [Phcl 444: Basic and Clinical Pharmacology II](#)
- [Phcl 445: Nutritional Pharmacology](#)
- [Phcl 501: Principles of Life Science Research](#)
- [Phcl 503: Lab Meth in Pharmacology & Toxicology I](#)
- [Phcl 504: Lab Meth in Pharmacology & Toxicology II](#)
- [Phcl 505: Modern Phcl: Novel Drugs Clinical Trials](#)
- [Phcl 541: Problems in Pharmacology](#)
- [Phcl 547: Introduction to Environmental Toxicology](#)
- [Phcl 563: Introductory Pharmacology I](#)
- [Phcl 564: Introductory Pharmacology II](#)
- [Phcl 569: Drug Abuse Education](#)
- [Phcl 581: Introduction to Toxicology](#)
- [Phcl 586: Receptors and Channels](#)
- [Phcl 611: Teaching in Pharmacology and Toxicology](#)
- [Phcl 612: Teaching in Pharmacology and Toxicology](#)
- [Phcl 641: Unified Lab in Pharm, Tox & Phys Chem](#)
- [Phcl 642: Unified Lab in Pharm, Tox & Phys Chem](#)
- [Phcl 643: Seminar: Curr Topics in Pharm & Tox](#)
- [Phcl 651: Directed Studies in Pharm and Tox](#)
- [Phcl 652: Directed Studies in Pharm and Tox](#)
- [Phcl 661: Advanced Physiology](#)
- [Phcl 662: Advanced Physiology](#)



- [Phcl 663: General Pharmacology I](#)
- [Phcl 665: Human Neurobiology](#)
- [Phcl 668: Externship in Pharmacology](#)
- [Phcl 669: Physiological Chemistry](#)
- [Phcl 675: Gen Princ of Pharmacology & Toxicology I](#)
- [Phcl 676: Gen Princ - Pharmacology & Toxicology II](#)
- [Phcl 677: Advanced Topics](#)
- [Phcl 679: Methods in Pharmacology and Toxicology](#)
- [Phcl 681: Sel Topics - Pharmacology and Toxicology](#)
- [Phcl 685: Externship in Toxicology](#)

### **Pharmaceutics & Drug Delivery**

- [Phar 432: Concepts in Pharmaceutical Biotechnology](#)
- [Phar 433: Pharmaceutical Industry](#)
- [Phar 435: Pharmaceutical Stability](#)
- [Phar 436: Product Development](#)
- [Phar 437: 3D Printing for Precision Medicine](#)
- [Phar 541: Problems in Pharmaceutics](#)
- [Phar 542: Problems in Pharmaceutics](#)
- [Phar 543: Seminar in Current Pharm. Topics](#)
- [Phar 544: Seminar in Current Pharm. Topics](#)
- [Phar 545: Biopharmaceutics and Pharmacokinetics](#)
- [Phar 547: Veterinary Pharmaceutics](#)
- [Phar 548: Clinical Laboratory Data Analysis](#)
- [Phar 630: Pharm. Protein Design and Development](#)
- [Phar 650: Formulation Development](#)
- [Phar 651: Regulatory Science I](#)
- [Phar 652: Regulatory Science II](#)
- [Phar 654: Special Problems in Biopharmaceutics](#)
- [Phar 658: Pharmaceutical Manufacturing](#)
- [Phar 696: Special Projects](#)
- [Phar 697: Thesis](#)
- [Phar 735: Analytical Pharmaceutics](#)
- [Phar 741: Advanced Pharmaceutics](#)
- [Phar 744: Stability of Pharmaceutical Systems](#)
- [Phar 749: Product Development](#)
- [Phar 750: Applied Pharmaceutics](#)
- [Phar 760: Applied Pharmacokinetics](#)
- [Phar 797: Dissertation](#)

### **Pharmacy Administration**

- [Phad 355: The Anthropology of Drugs](#)
- [Phad 393: Learning & Teaching: A Professional Elec](#)
- [Phad 394: Intermed. Biostatistics for Pharmacists](#)
- [Phad 395: Pharmacy Ethics](#)
- [Phad 396: Marketing for Community Pharmacists](#)
- [Phad 397: Survey of Medication Nonadherence](#)
- [Phad 430: Research Methods for Pharmacists](#)
- [Phad 470: Phy & Psychosoc Aspects Women's Health](#)
- [Phad 478: History of Pharmacy](#)
- [Phad 492: Current Issues in Health Care](#)
- [Phad 495: Techniques of Pharmaceutical Sales](#)
- [Phad 496: Principles of Pharmaceutical Marketing](#)
- [Phad 497: Personal Finance for Pharmacists](#)
- [Phad 541: Problems in Pharmacy Administration](#)
- [Phad 542: Problems in Pharmacy Administration](#)
- [Phad 543: Seminar in Current Health Topics](#)
- [Phad 544: Seminar in Current Health Topics](#)
- [Phad 545: Aspects of Pediatric Pharmacy Practice](#)
- [Phad 546: Film and Pharmacy](#)



- [Phad 547: Phy & Psychosoc Aspects Women's Health](#)
- [Phad 597: Medical Anthropology](#)
- [Phad 599: Health Care and Contemporary Society](#)
- [Phad 630: Intro to Implementation Science](#)
- [Phad 661: Epidemiology and Health Data Management](#)
- [Phad 679: Primary Data Techniques](#)
- [Phad 687: Secondary Data Techniques](#)
- [Phad 688: Research Methodology and Techniques](#)
- [Phad 689: Pharmaceutical and Healthcare Policy](#)
- [Phad 690: Data Management and Statistical Software](#)
- [Phad 693: Health Economics](#)
- [Phad 697: Thesis](#)
- [Phad 698: Non-thesis Research](#)
- [Phad 774: Research in Pharmacy Administration](#)
- [Phad 780: General Linear Models](#)
- [Phad 781: Applied Multivariate Analysis](#)
- [Phad 783: Adv Pharmaceutical Mkting & Patient Beha](#)
- [Phad 786: Patient Reported Outcomes](#)
- [Phad 792: Drug Development and Marketing](#)
- [Phad 794: Pharmacoeconomics](#)
- [Phad 795: Special Topics in Pharmacy Administratio](#)
- [Phad 796: Pharmacoepidemiology](#)
- [Phad 797: Dissertation](#)

### **Pharmacy Practice**

- [Acad 591: Academia Advanced Practice Experience](#)
- [Ambc 591: Ambulatory Care Clerkship](#)
- [Bari 591: Bariatric Advanced Pharmacy Practice Exp](#)
- [Biot 591: Biotech Pharmacy Services Advanced Pharm](#)
- [Card 591: Cardiology Clerkship](#)
- [Comm 591: Community Pharmacy Clerkship](#)
- [Crit 591: Critical Care Clerkship](#)
- [Dinf 591: Drug Information Clerkship](#)
- [Emer 591: Emergency Medical Clerkship](#)
- [Gera 591: Geriatrics Clerkship](#)
- [Home 591: Home Infusion Advanced Pharmacy Practice](#)
- [Inad 591: Institutional Administration Advanced Ph](#)
- [Indy 591: Pharmaceutical Industry Clerkship](#)
- [Infid 591: Infectious Disease Clerkship](#)
- [Info 591: Informatics Practice Experience](#)
- [Inop 591: Institutional Out-Patient Practice Exper](#)
- [Lead 591: Leadership and Advocacy in Pharmacy](#)
- [Manc 591: Managed Care Clerkship](#)
- [Medc 591: Medicine Clerkship](#)
- [Mgmt 591: Pharmacy Management Advanced Pharmacy Ph](#)
- [Mspe 591: Medication Safety Practice Experience](#)
- [Neon 591: Neonatology Advanced Pharmacy Practice E](#)
- [Neur 591: Neurology Clerkship](#)
- [Nucl 591: Nuclear Medicine Advanced Pharmacy Pract](#)
- [Nutr 591: Nutrition Clerkship](#)
- [Oncl 591: Oncology Clerkship](#)
- [Pain 591: Pain Management Advanced Pharmacy Practi](#)
- [Peds 591: Pediatric Clerkship](#)
- [Phcy 470: Distributive Intro Pharmacy Practice Exp](#)
- [Phcy 471: Institutional Immersion IPPE I](#)
- [Phcy 510: Community Pharmacy Practice II](#)
- [Phcy 591: Elective APPE](#)
- [Phcy 592: Elective APPE](#)
- [Phcy 593: Elective APPE](#)
- [Phcy 653: Community Required APPE](#)



- [Phcy 654: Institutional Required APPE](#)
- [Phcy 666: Personal & Professional Development IV](#)
- [Phcy 667: Personal & Professional Development V](#)
- [Phcy 686: Adult Medicine Required APPE](#)
- [Phcy 687: Ambulatory Care Required APPE](#)
- [Pkin 591: Pharmacokinetics Clerkship](#)
- [Pmtm 591: Pharmacy Medication Therapy Management](#)
- [Pois 591: Poison Control Clerkship](#)
- [Prct 357: Advocacy and Leadership in Pharmacy](#)
- [Prct 358: Geriatrics](#)
- [Prct 359: Tobacco Cessation Education](#)
- [Prct 360: Personal Time Mngmt for Pharm Students](#)
- [Prct 361: Vaccine-preventable Illnesses/Travel med](#)
- [Prct 362: Veterinary Pharmacy](#)
- [Prct 363: Pharmacy Microcontrollers & the Interne](#)
- [Prct 470: Introduction to Nuclear Pharmacy](#)
- [Prct 471: Advanced Topics in Cardiology](#)
- [Prct 472: Life After Graduation](#)
- [Prct 473: Beyond Dispensing](#)
- [Prct 474: Advanced Infectious Diseases](#)
- [Prct 475: Nutrition Support](#)
- [Prct 476: Wellbeing & Resiliency for Student Pharm](#)
- [Prct 477: Institutional Pharmacy Practice II](#)
- [Prct 480: Introduction to Global Health & Pharmacy](#)
- [Prct 486: Resiliency in Professional Life](#)
- [Prct 488: Advanced Topics in Diabetes Care](#)
- [Prct 489: Advanced Topics Critical & Emergent Care](#)
- [Prct 490: Landmark Trials](#)
- [Prct 541: Problems in Clinical Pharmacy](#)
- [Prct 543: Community Pharmacy Practice III](#)
- [Prct 544: Institutional Pharmacy Practice III](#)
- [Prct 545: Specialty Pharmacy Practice Elective](#)
- [Prct 552: Preventive Medicine and Public Health](#)
- [Prct 555: Pharmaceutical Care I: Knowledge & Compr](#)
- [Prct 556: Pharmaceutical Care I: Problem-Solvin](#)
- [Prct 557: Pharmaceutical Care I: Group](#)
- [Prct 558: Pharmaceutical Care II: Knowledge & Comp](#)
- [Prct 559: Pharmaceutical Care II: Problem-Solving](#)
- [Prct 560: Pharmaceutical Care II: Group](#)
- [Prct 561: Pharmaceutical Care III: Knowledge & Comp](#)
- [Prct 562: Pharmaceutical Care III: Problem-Solving](#)
- [Prct 563: Pharmaceutical Care III: Group](#)
- [Prct 564: Pharmaceutical Care IV: Knowledge & Comp](#)
- [Prct 565: Pharmaceutical Care IV: Problem-Solving](#)
- [Prct 568: Pediatric Pharmacotherapy](#)
- [Prct 569: Pharmaceutical Care IV: Group](#)
- [Prct 570: Patient-Caregiver-Provider Education](#)
- [Prct 577: Practice Skills Laboratory V](#)
- [Prct 599: Clinical Trials Skills](#)
- [Psyc 591: Psychiatry Clerkship](#)
- [Pubh 591: Public Health Advanced Pharmacy Practice](#)
- [Rsch 591: Research Advanced Pharmacy Practice Exp](#)
- [SBOP 591: State Board of Pharmacy Practice Exp](#)
- [Spec 591: Specialty Pharmacy Practice Experience](#)
- [Surg 591: Surgery Clerkship](#)
- [Tran 591: Organ Transplant Advanced Pharmacy Pract](#)
- [Vetp 591: Veterinary Medicine Advanced Pharmacy Pr](#)
- [Womh 591: Women's Health Advanced Pharmacy Practic](#)

