College of Pharmacy

College of Pharmacy

Overview

The Purdue College of Pharmacy, consistently ranked among the 10 best pharmacy programs in the nation, offers a uniquely diverse range of undergraduate and graduate study opportunities. A total of 10 different programs and 700 pharmacy practice experiences prepare students for a range of top-paying careers in the fields of pharmacy, pharmaceutical sciences, and the health sciences.

Undergraduate Programs

The Purdue College of Pharmacy offers two undergraduate programs:

- The Pre-Pharmacy Program is a two-year, non-degree program that is intended to prepare students for entry into the PharmD program below. Completing this program, however, does not guarantee entry into the PharmD program.
- The Bachelor of Science in Pharmaceutical Sciences (BSPS) is a four-year undergraduate program that stresses the multidisciplinary basic sciences related to drug discovery, development, and commercialization. A degree in this program does not allow graduates to become licensed pharmacists.

Professional Programs

- The Doctor of Pharmacy (PharmD) is a four-year professional degree program, which requires completion of a recognized pre-pharmacy program. Successful completion of this degree allows you to sit for the licensing exam to practice pharmacy.

Graduate Programs

The Purdue College of Pharmacy boasts one of the oldest and most-respected graduate programs in the U.S. Each of the three departments of the Purdue College of Pharmacy offer graduate programs:

- Industrial and Physical Pharmacy
- Medicinal Chemistry and Molecular Pharmacology
- Pharmacy Practice

Each department offers a PhD degree program. All of these programs require strong undergraduate preparation, including completion of a Bachelor's Degree for admission.

A combined-degree program allows students in the third year of the PharmD program to begin work on a Pharmacy PhD program while completing the PharmD curricula. Through a judicious choice of electives and research rotations, such students can save up to two years on the total time required for the PhD program. Additional information can be found by reading the full program description.

For more information, please contact Dr. Tonglei Li, the Associate Dean for Graduate Programs.

Continuing Education Programs

The College's continuing education programs offer several non-degree certificate programs.

Admissions

https://www.pharmacy.purdue.edu/future-students/admissions

College Advising

https://www.pharmacy.purdue.edu/oss/contact-information

Contact Information

Prospective undergraduate and professional program students

Contact Holly W. Keckler, Associate Director for Recruitment, Office of Student Services:

Phone: (765) 496-7381

Fax: (765) 496-1875

E-mail: keckler@purdue.edu

Office: Room 156 RHPH

Prospective undergraduate and professional students who are interested in visiting the College and learning about programs for under-represented populations are urged to contact the Office of Multicultural Programs to arrange for their visit.

Students completing their pre-pharmacy coursework off-campus should contact T. Patrick George.

Prospective graduate students

Generally, you should contact the graduate program in which you are interested. The College's graduate programs are administered by the three departments in the College - Industrial and Physical Pharmacy, Medicinal Chemistry and Molecular Pharmacology, and Pharmacy Practice (includes Pharmacy Administration). Additionally, some of the faculty in the College participate in some of the University's interdisciplinary graduate programs, which can be contacted directly.

If you have difficulty contacting a department or program, you may contact Janine Mott, Administrative Assistant for Graduate Affairs:

Phone: (765) 494-1362

Fax: (765) 494-7880

E-mail: jmott@purdue.edu

Office: Room 112 RHPH

College of Pharmacy Administration

Overview

The Purdue College of Pharmacy, consistently ranked among the 10 best pharmacy programs in the nation, offers a uniquely diverse range of undergraduate and graduate study opportunities. A total of 10 different programs and 700 pharmacy practice experiences prepare students for a range of top-paying careers in the fields of pharmacy, pharmaceutical sciences, and the health sciences.

Undergraduate and Professional Programs

The Purdue College of Pharmacy offers two undergraduate and one professional program:

- The Pre-Doctor of Pharmacy Program is a two-year, non-degree program that is intended to prepare students for entry into the PharmD program below. Completing this program, however, does not guarantee entry into the PharmD program.
- The Bachelor of Science in Pharmaceutical Sciences (BSPS) is a four-year undergraduate program that stresses the multidisciplinary basic sciences related to drug discovery, development, and commercialization. A degree in this program does not allow graduates to become licensed pharmacists.
- The Doctor of Pharmacy (PharmD) is a four-year professional degree program, which requires completion of a recognized pre-pharmacy program. Successful completion of this degree allows you to sit for the licensing exam to practice pharmacy.

Faculty

https://www.pharmacy.purdue.edu/directory

Contact Information

Prospective undergraduate and professional program students

Contact Holly W. Keckler, Associate Director for Recruitment, Office of Student Services:

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Office: Room 156 RHPH

Prospective undergraduate and professional students who are interested in visiting the College and learning about programs for under-represented populations are urged to contact the Office of Multicultural Programs to arrange for their visit.

Students completing their pre-pharmacy coursework off campus should contact T. Patrick George.

Pharmacy, Pharm.D ‡

About the Program

The Doctor of Pharmacy (Pharm D) is a four-year professional degree. The classroom, lab, and experiential requirements provide students with the educational background to enter any field of pharmacy practice. Upon graduation, students are eligible to take the pharmacy licensing examination. Or they may choose to move on to graduate-level studies in pharmacy or related fields. PharmD graduates may also pursue post-graduate residency programs in general or specialty practice areas. To be considered for entrance into the PharmD program, applicants must have successfully completed Purdue College of Pharmacy's two-year Pre-Doctor of Pharmacy Program or the equivalent coursework at another accredited institution.

Purdue College of Pharmacy is consistently ranked in the top ten pharmacy programs in the U.S. and boasts an extremely distinguished 85-member faculty renowned for both its cutting-edge work in pharmaceutical research and for developing educational curricula used in pharmacy programs around the world. Students benefit from an integrated, hands-on approach, learning valuable lessons not just in classrooms and laboratories, but also in a 10-month series of rotations in hospitals, pharmacies, and other real-world settings for pharmaceutical professionals.

Doing your Pre-Pharmacy work through Purdue's condensed two-year program can save you up to two years of study and student loan debt, as well as get onto the job market two years faster. That's a big part of the reason why Purdue PharmD graduates have less debt upon completion of their degree than PharmD students from any other Big Ten pharmacy program.

Degree Requirements and Supplemental Information

The full Program Requirements for 2016-17 Doctor of Pharmacy (Pharm.D.) include all Supplemental Information and selective lists of those categories which a student must fulfill in order to earn their degree. These are intended to be printer-friendly, but include less descriptive course detail.

Please see below for program requirements and the necessary degree fulfillments.

Program: DPHRM-DP
Major: DPTR
Credit Hours: 140

College of Pharmacy

University Core Requirements

exempt for professional program

Departmental/Program Major Courses (129 credits)

PHRM 82000 - Professional Program Laboratory I

Credit Hours: 1.00. Experiments, computer simulations, case studies, and problem sets that actively involve the student in problem-solving, applying and interrelating important concepts from the core courses taught that semester. Typically offered Fall.

PHRM 82100 - Professional Program Laboratory II

Credit Hours: 1.00. Continuation of PHRM 82000 with emphasis upon modules that provide laboratory practice experience designed to integrate basic science concepts and practice applications. Small group problem-solving methodology will be utilized as appropriate. Typically offered Spring.

PHRM 82200 - Pharmacy Skills And Patient Counseling

Credit Hours: 2.00. Pharmacy Skills and Patient Counseling is a two credit hour, required first professional year experiential course combining practical experience in the Purdue University Pharmacy with lecture. Students are monitored by faculty instructors, staff pharmacists and Advanced Pharmacy Practice Experience (APPE) students. Students must have a valid Social Security number the first week of class. Typically offered Fall Spring.

PHRM 82400 - Principles Of Pathophysiology And Drug Action

Credit Hours: 3.00. This course introduces the basic principles of pathophysiology, pharmacodynamics, toxicology and medicinal chemistry necessary to understand the therapeutic use and adverse actions of drugs. The course will integrate and apply concepts of science courses, including organic chemistry, biochemistry, anatomy and physiology into an understanding of the basic fundamentals of disease processes, toxicology and drug actions. Thus, this course will provide students with the basic background necessary to understand and apply pharmacotherapeutics to the practice of pharmacy. Prerequisite: MCMP 20400, MCMP 20500, MCMP 20800, and BIOL 20300, BIOL 20400 or BIOL 30100, BIOL 30200. Departmental permission required. Typically offered Fall.

PHRM 82500 - Integrated Pharmacotherapy I

Credit Hours: 6.00. This course will serve as an integrated approach to the physiology/pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics/ pharmaceutics, and pharmacotherapeutics of the following topics: fluids/electrolyte pharmacotherapy, renal diseases, acid/base disorders, clinical nutrition, autonomic nervous system (ANS), pulmonary diseases, hematology, immunology, and rheumatology. The emphasis of this course is knowledge and skill development. Also in the process of completing the objectives, attitudes toward the role of the pharmacist and patient-related issues will be imparted. Typically offered Spring.

PHRM 82600 - Introduction To Patient Centered Care

Credit Hours: 4.00. The introductory course teaches students the key communication principles and skills necessary to deliver patient care and interact with other health care professionals. This includes performing basic physical assessments, evaluating patient comprehension, and improving personal communication skills. Typically offered Fall.

PHRM 82700 - Public Health Pharmacy

Credit Hours: 3.00. The course is designed to provide the pharmacy student with a comprehensive overview of key public health and wellness principles and related to self-care and nonprescription products as they impinge upon the ability of patients to assume active roles and function effectively on their own behalf in health promotion and disease prevention, detection, and treatment. Typically offered Spring.

PHRM 82800 - Dosage Forms I

Credit Hours: 3.00. The purpose of Dosage Forms I is to provide a foundation in the basic concepts of pharmaceutics that are the foundation of drug delivery. The course begins by presenting the molecular basis for aqueous and lipid solubility of drugs, pharmacokinetic principles that are related to dosage forms, mechanisms by which excipients or manufacturing processes affect bioavailability, and chemical kinetics applied to the shelf-life of dosage forms. The pharmaceutics principles are then applied to successively more complex liquid dosage forms: solution, emulsion, and suspension. The excipients that are required to prepare the dosage forms: buffers, preservatives, emulsifiers, suspending agents, wetting agents, etc. and the method of preparing each dosage form in both a compounding and manufacturing setting are covered. Typically offered Fall.

PHRM 82900 - Dosage Forms II

Credit Hours: 2.00. Education in the use of dosage forms to deliver drugs. Collaboration with peers and other members of the health care team regarding the proper use of the various dosage forms so that the desired therapeutic objective is achieved. Typically offered Spring.

PHRM 83100 - Health Care Systems

Credit Hours: 2.00. This course is envisioned as a primarily didactic course whose main purpose is to provide students with an introduction to the structures and functions of the United States Health Care System. It is also designed to provide the student an opportunity to compare and contrast the methods used in other countries to address the needs of society for provision of health care to its members. Typically offered Spring.

PHRM 83200 - Principles Of Diagnosis Labs And Monitoring

Credit Hours: 1.00. This course will serve as an introduction to the role of diagnostics in the clinical continuum of patient care. Since most therapeutic decisions are based in part on information obtained through utilization of diagnostic testing, it is important for pharmacists to have an understanding of these tests as the pertain to diagnosis. As they progress in their training, students will be required to evaluate and interpret diagnostic tests to help monitor and fine tune drug therapy. This course will provide an introduction to diagnostic testing as a whole, with an introduction to differential diagnosis and the selection of diagnostic tests. The students will also have the opportunity to learn about different types of testing (lab, imaging, etc.) and how to critically judge information provided by various tests. Finally, the students will be introduced to several common laboratory tests that have wide application in the diagnosis and treatment of many different disease states. This course will provide a background introduction to these tests, allowing the students to gain understanding of how the test is performed, how the results are interpreted and how to identify potential problems with the laboratory data, allowing a strong foundation as they move into subsequent integrated pharmacotherapeutic (IP) modules. Typically offered Fall.

PHRM 83400 - Pharmaceutical Calculations

Credit Hours: 1.00. Mastery of pharmaceutical calculation skills is vital and PHRM 83400 prepares students to apply calculation problem solving skills to clinical practice. PHRM 83400 prepares students to perform pharmaceutical calculations necessary for prescription/drug

order preparation, compounding dosage forms, and medication dosage calculations based on patient specific factors. Pharmacists must perform error-free pharmaceutical calculations. Correct calculations contribute as much to pharmaceutical care as the newest methods/guidelines for diagnosis, treatment, and prevention. The development of problem solving skills with pharmaceutical calculations is an important component of this course. In addition, practice ad repetition of problems is necessary to develop confidence as well as accuracy. Appropriate documentation of work/set up and numerical answers (including units) is required. Approaches to minimize errors and maximize accuracy with pharmaceutical calculations are emphasized. Typically offered Fall.

PHRM 83600 - Biochemistry For Pharmaceutical Sciences II

Credit Hours: 2.00. This course provides instruction in biochemistry that builds on basic knowledge by presenting content on advanced aspects of human biochemistry for students in pharmaceutical sciences. The content emphasizes the integration of biochemical knowledge and the application of biochemical understanding to medically relevant situations including disease etiology, medical diagnosis, disease research, drug discovery, drug and toxin mechanisms of action, and mechanism of drug metabolism. Typically offered Fall.

PHRM 84000 - Professional Program Laboratory III

Credit Hours: 1.00. Experiments, simulations, case studies, and problem sets that actively involve the student in problem-solving, applying and interrelating important concepts from the core courses taught that semester. Typically offered Fall.

PHRM 84100 - Professional Program Laboratory IV

Credit Hours: 1.00. Experiments, simulations, case studies, and problem sets that actively involve the student in problem-solving, applying and interrelating important concepts form the core courses taught that semester. Typically offered Spring.

PHRM 84200 - Community Pharmacy IPPE

Credit Hours: 4.00. A 4-credit hour required experiential course in the second year of the professional Doctor of Pharmacy program. Students learn community pharmacy operations and patient counseling skills. Typically offered Fall Spring Summer.

PHRM 84400 - Integrated Pharmacotherapy II

Credit Hours: 6.00. This course will provide an integrated approach to instruct the students in physiology, pathophysiology, pharmacology, medicinal chemistry, and therapeutics relevant to diseases of the endocrine and cardiovascular systems. When applicable, special emphasis will be placed on presenting the interrelationships between deficits in endocrine function and cardiovascular disease. In addition, students will study and critique current therapeutic approaches and opinions in the application of replacement therapy with natural, synthetic, or recombinant hormone preparations. Typically offered Fall.

PHRM 84500 - Integrated Pharmacotherapy III

Credit Hours: 6.00. This course will develop knowledge and skills regarding the physiology/ pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics/pharmaceutics, and pharmacotherapy of specific cardiovascular diseases, neurology diseases, and psychiatric disorders. Typically offered Spring.

PHRM 84600 - Principles Of Pharmacokinetics

Credit Hours: 3.00. This course introduces the theory and concepts of pharmacokinetics and biopharmaceutics. It provides the student with a foundation for more advanced therapeutic concepts in subsequent courses. The learner will develop expertise in quantifying drug absorption, distribution and elimination from concentration vs. time data or urinary drug excretion vs. time data to estimate primary pharmacokinetic parameters. Use of these parameters is required to design and modify individual drug-dosing regimens. Typically offered Fall.

PHRM 84700 - Principles Of Pharmacogenomics

Credit Hours: 2.00. Personalized treatment has been expected to sustainability reform the pharmacotherapy in next decades. There has been increased application of pharmacogenomics knowledge in clinical practice right now. Therefore, it is an urgent need to integrate the pharmacogenomic knowledge into the pharmacist education and training program to meet the immediate requirements in the current and future clinical practice. This course is designed to introduce new knowledge about the theory and concepts of pharmacogenomics and personalized medicine to professional pharmacy students for meeting the requirement for their Pharm D degree. Typically offered Spring.

PHRM 84800 - Principles Of Drug Information And Literature Evaluation

Credit Hours: 3.00. This course is designed to provide students with the fundamental skills needed for the provision of drug information in pharmacy practice. Emphasis is placed on the evaluation, interpretation, and practical implications of primary medical literature on the delivery of pharmaceutical care. Four recently published clinical trials will be reviewed and discussed throughout the semester to illustrate contemporary issues in the interpretation of biomedical research. Typically offered Fall.

PHRM 84900 - Population Health Management

Credit Hours: 2.00. This two-credit hour course aims to provide students with the core knowledge and basic skills used in managing the health of populations. Core content will include managed care principles, pharmacist involvement in managed care, and program designs. The course will also provide instruction in the topic areas of pharmacoepidemiology and pharmacoeconomics. Typically offered Spring.

PHRM 85000 - Immunization Certification

Credit Hours: 1.00. The purpose of the course is to provide immunization training certification for students in the Doctor of Pharmacy program. Certification is awarded based on completion of the Pharmacy-Based Immunization Delivery program content that is provided through the American Pharmacists Association (AphA). All students will be expected to have completed immunization training as a graduation requirement. Typically offered Fall Spring Summer.

PHRM 86000 - Professional Program Laboratory V

Credit hours: 1.00. This course is an interdisciplinary laboratory course that presents a practical application of scientific and clinical knowledge in the context of patient-centered pharmaceutical care. Typically offered Fall.

PHRM 86100 - Professional Program Laboratory VI

Credit Hours: 1.00. This course is an interdisciplinary laboratory course that presents a practical application of scientific and clinical knowledge in the context of patient-centered pharmaceutical care. It serves as a one credit hour course. In accordance with university policy, this course may require up to three hours of work weekly outside of the arranged class time. Typically offered Spring.

PHRM 86200 - Institutional Pharmacy Introductory Pharmacy Practice Experience

Credit Hours: 4.00. A 4-credit hour required experiential course in the third year of the professional Doctor of Pharmacy program. Students learn basic institutional pharmacy operations and sterile product compounding. Typically offered Fall Spring Summer.

PHRM 86400 - Integrated Pharmacotherapy IV

Credit Hours: 6.00. This course will develop knowledge and skills regarding the physiology, pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics, pharmaceutics, and pharmacotherapeutics of oncology and hematologic malignancies, hepatic disorders, gastrointestinal disorders, and women's and men's health. This knowledge will be utilized in subsequent integrated pharmacotherapy modules, skills labs and practice experience that follow. Typically offered Fall.

PHRM 86500 - Integrated Pharmacotherapy V

Credit Hours: 6.00. This course provides an integrated approach to the physiology, pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics, pharmacodynamics and pharmacotherapeutics of infectious diseases. It covers a vast array of microbiological pathogens, including bacteria, fungi, viruses, mycobacteria, parasites, protozoa and malaria. Typically offered Spring.

PHRM 86600 - Biotech/Advanced Parenteral Dosage Forms

Credit Hours: 2.00. This course covers the different types of parenteral products derived from biotechnology. The lectures encompass the origin, chemical characteristics and therapeutic use of biopharmaceuticals. This course builds on the concepts and skills gained by the student from taking Dosage Forms II (PHRM 82900) and Professional Program Laboratory II (PHRM 82100). Typically offered Fall.

PHRM 86700 - Introduction To The Advanced Pharmacy Practice Experience

Credit Hours: 1.00. The Introduction to Advanced Pharmacy Practice Experience (APPE) course was designed to provide students with the tools needed to be successful clerkship students. Students will participate in a variety of activities, including case studies, group work, evaluations and assessment, review of therapeutic topics, and student/preceptor panel interactions. Activities will be supplemented by didactic lecturing for each topic. The activities and lecture topics were selected based on feedback from previous clerkship students, preceptors, and faculty, and are intended to "de-mystify" the clerkship experience. This course prepares students to enter the clerkship year with the ability to successfully submit required clerkship forms, evaluate preceptors and peers, avoid common clerkship student mistakes, document clinical interventions, review medical charts, and prepare for therapeutic and pharmacokinetic responsibilities. Typically offered Spring.

PHRM 86800 - Patient Safety And Informatics

Credit Hours: 3.00. This course provides core knowledge and skills needed by pharmacists to promote patient safety and use the tools of healthcare informatics; understand the landscape, epidemiology and culture of patient safety data privacy and security. Case studies will address disclosure of medication errors and reporting adverse events. Informatics tools such as computer order entry, electronic medical record systems, health information exchanges, and decision support will be explained. The use of informatics tools to promote patient safety

will be emphasized. Typically offered Fall.

PHRM 86900 - Practice Management And Marketing Of Professional Services

Credit Hours: 2.00. Introduces essential pharmacy practice managerial skills including personnel management, addressing conflict, CQI, change management and leadership. Builds upon these skills in the development of a business plan to implement an innovative pharmacy service. Typically offered Spring.

PHRM 87000 - Health Policy Applications

Credit Hours: 1.00. This course will explore policy issues that influence health care. The course will provide students opportunities to apply material from prior courses in Health Systems, Population Health Management, and Public Health is it relates to the impact of health policy. Students will gain an understanding of how policy development must address competing interests and goals, and how policy can influence the scope of pharmacist's professional roles. Timely materials on current policy, current policy debates, and professional advocacy will be discussed. Typically offered Fall.

PHRM 87100 - Jurisprudence

Credit Hours: 2.00. An in depth study of federal and Indiana laws, regulations, and rules affecting pharmacy practice. Primary emphasis is on Retail and Hospital Pharmacy settings. Lecture is supported by an instructor-created text covering the Food, Drug, and Cosmetic Act (21 USC), the Controlled Substances Act 21 CFR 1300 et. seq. and Indiana Food and Drug law IC 25-26-13 et. seq. and Indiana rules 856 IAC-1-43. Typically offered Spring.

PHRM 88000 - Advanced Pharmacy Practice Experience

Credit Hours: 4.00. This final year begins in May and continues through the following April. The 40 weeks of rotation are broken down as follows: 4 weeks Hospital Operations 2, 4 weeks Community Pharmacy Operations 2, 8 weeks Ambulatory rotations, 8 weeks inpatient rotations, and 16 weeks General Electives (4 of which must be additional patient care rotation). Typically offered Fall Spring Summer.

Free Electives (11 credits) **

Note

ǂ Completion of pre-pharmacy requirements and admission to the PharmD program required. See College of Pharmacy website for admission criteria.

* Proof of certification may be used to fulfill Immunization requirement, but students are still required to complete 140 total credit hours.

** A maximum of 6 out of 11 required elective credit hours may be taken Pass/No Pass

Students wishing to receive the Bachelor of Pharmaceutical Sciences in addition to the PharmD degree MUST complete University Core Curriculum requirements. See Pharmaceutical Sciences plan of study for required coursework.

Program Requirements

(see your academic advisor for other options creating your plan of study)

Fall 1st Year

PHRM 82000 - Professional Program Laboratory I

Credit Hours: 1.00. Experiments, computer simulations, case studies, and problem sets that actively involve the student in problem-solving, applying and interrelating important concepts from the core courses taught that semester. Typically offered Fall.

PHRM 82200 - Pharmacy Skills And Patient Counseling

Credit Hours: 2.00. Pharmacy Skills and Patient Counseling is a two credit hour, required first professional year experiential course combining practical experience in the Purdue University Pharmacy with lecture. Students are monitored by faculty instructors, staff pharmacists and Advanced Pharmacy Practice Experience (APPE) students. Students must have a valid Social Security number the first week of class. Typically offered Fall Spring.

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Credit Hours: 3.00. This course introduces the basic principles of pathophysiology, pharmacodynamics, toxicology and medicinal chemistry necessary to understand the therapeutic use and adverse actions of drugs. The course will integrate and apply concepts of science courses, including organic chemistry, biochemistry, anatomy and physiology into an understanding of the basic fundamentals of disease processes, toxicology and drug actions. Thus, this course will provide students with the basic background necessary to understand and apply pharmacotherapeutics to the practice of pharmacy. Prerequisite: MCMP 20400, MCMP 20500, MCMP 20800, and BIOL 20300, BIOL 20400 or BIOL 30100, BIOL 30200. Departmental permission required. Typically offered Fall.

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Credit Hours: 4.00. The introductory course teaches students the key communication principles and skills necessary to deliver patient care and interact with other health care professionals. This includes performing basic physical assessments, evaluating patient comprehension, and improving personal communication skills. Typically offered Fall.

PHRM 82800 - Dosage Forms I

Credit Hours: 3.00. The purpose of Dosage Forms I is to provide a foundation in the basic concepts of pharmaceutics that are the foundation of drug delivery. The course begins by presenting the molecular basis for aqueous and lipid solubility of drugs, pharmacokinetic principles that are related to dosage forms, mechanisms by which excipients or manufacturing processes affect bioavailability, and chemical kinetics applied to the shelf-life of dosage forms. The pharmaceutics principles are then applied to successively more complex liquid dosage forms: solution, emulsion, and suspension. The excipients that are required to prepare the dosage forms: buffers, preservatives, emulsifiers, suspending agents, wetting agents, etc. and the method of preparing each dosage form in both a compounding and manufacturing setting are covered. Typically offered Fall.

PHRM 83200 - Principles Of Diagnosis Labs And Monitoring

Credit Hours: 1.00. This course will serve as an introduction to the role of diagnostics in the clinical continuum of patient care. Since most therapeutic decisions are based in part on information obtained through utilization of diagnostic testing, it is important for pharmacists to have an understanding of these tests as the pertain to diagnosis. As they progress in their training, students will be required to evaluate and interpret diagnostic tests to help monitor and fine tune drug therapy. This course will provide an introduction to diagnostic testing as a whole, with an introduction to differential diagnosis and the selection of diagnostic tests. The students will also have the opportunity to learn about different types of testing (lab, imaging, etc.) and how to critically judge information provided by various tests. Finally, the students will be introduced to several common laboratory tests that have wide application in the diagnosis and treatment of many different disease states. This course will provide a background introduction to these tests, allowing the students to gain understanding of how the test is performed, how the results are interpreted and how to identify potential problems with the laboratory data, allowing a strong foundation as they move into subsequent integrated pharmacotherapeutic (IP) modules. Typically offered Fall.

PHRM 83400 - Pharmaceutical Calculations

Credit Hours: 1.00. Mastery of pharmaceutical calculation skills is vital and PHRM 83400 prepares students to apply calculation problem solving skills to clinical practice. PHRM 83400 prepares students to perform pharmaceutical calculations necessary for prescription/drug order preparation, compounding dosage forms, and medication dosage calculations based on patient specific factors. Pharmacists must perform error-free pharmaceutical calculations. Correct calculations contribute as much to pharmaceutical care as the newest methods/guidelines for diagnosis, treatment, and prevention. The development of problem solving skills with pharmaceutical calculations is an important component of this course. In addition, practice ad repetition of problems is necessary to develop confidence as well as accuracy. Appropriate documentation of work/set up and numerical answers (including units) is required. Approaches to minimize errors and maximize accuracy with pharmaceutical calculations are emphasized. Typically offered Fall.

PHRM 83600 - Biochemistry For Pharmaceutical Sciences II

Credit Hours: 2.00. This course provides instruction in biochemistry that builds on basic knowledge by presenting content on advanced aspects of human biochemistry for students in pharmaceutical sciences. The content emphasizes the integration of biochemical knowledge and the application of biochemical understanding to medically relevant situations including disease etiology, medical diagnosis, disease research, drug discovery, drug and toxin mechanisms of action, and mechanism of drug metabolism. Typically offered Fall.

17 Credits

Spring 1st Year

PHRM 82100 - Professional Program Laboratory II

Credit Hours: 1.00. Continuation of PHRM 82000 with emphasis upon modules that provide laboratory practice experience designed to integrate basic science concepts and practice applications. Small group problem-solving methodology will be utilized as appropriate. Typically offered Spring.

PHRM 82500 - Integrated Pharmacotherapy I

Credit Hours: 6.00. This course will serve as an integrated approach to the physiology/pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics/ pharmaceutics, and pharmacotherapeutics of the following topics: fluids/electrolyte pharmacotherapy, renal diseases, acid/base disorders, clinical nutrition, autonomic nervous system (ANS), pulmonary diseases, hematology, immunology, and rheumatology. The emphasis of this course is knowledge and skill development. Also in the process of completing the objectives, attitudes toward the role of the pharmacist and patient-related issues will be imparted. Typically offered Spring.

PHRM 82700 - Public Health Pharmacy

Credit Hours: 3.00. The course is designed to provide the pharmacy student with a comprehensive overview of key public health and wellness principles and related to self-care and nonprescription products as they impinge upon the ability of patients to assume active roles and function effectively on their own behalf in health promotion and disease prevention, detection, and treatment. Typically offered Spring.

PHRM 82900 - Dosage Forms II

Credit Hours: 2.00. Education in the use of dosage forms to deliver drugs. Collaboration with peers and other members of the health care team regarding the proper use of the various dosage forms so that the desired therapeutic objective is achieved. Typically offered Spring.

PHRM 83100 - Health Care Systems

Credit Hours: 2.00. This course is envisioned as a primarily didactic course whose main purpose is to provide students with an introduction to the structures and functions of the United States Health Care System. It is also designed to provide the student an opportunity to compare and contrast the methods used in other countries to address the needs of society for provision of health care to its members. Typically offered Spring.

PHRM 85000 - Immunization Certification

Credit Hours: 1.00. The purpose of the course is to provide immunization training certification for students in the Doctor of Pharmacy program. Certification is awarded based on completion of the Pharmacy-Based Immunization Delivery program content that is provided through the American Pharmacists Association (AphA). All students will be expected to have completed immunization training as a graduation requirement. Typically offered Fall Spring Summer.

- Electives - Credit Hours: 1.00

16 Credits

Fall 2nd Year

PHRM 84000 - Professional Program Laboratory III

Credit Hours: 1.00. Experiments, simulations, case studies, and problem sets that actively involve the student in problem-solving, applying and interrelating important concepts from the core courses taught that semester. Typically offered Fall.

PHRM 84200 - Community Pharmacy IPPE

Credit Hours: 4.00. A 4-credit hour required experiential course in the second year of the professional Doctor of Pharmacy program. Students learn community pharmacy operations and patient counseling skills. Typically offered Fall Spring Summer.

PHRM 84400 - Integrated Pharmacotherapy II

Credit Hours: 6.00. This course will provide an integrated approach to instruct the students in physiology, pathophysiology, pharmacology, medicinal chemistry, and therapeutics relevant to diseases of the endocrine and cardiovascular systems. When applicable, special emphasis will be placed on presenting the interrelationships between deficits in endocrine function and cardiovascular disease. In addition, students will study and critique current therapeutic approaches and opinions in the application of replacement therapy with natural, synthetic, or recombinant hormone preparations. Typically offered Fall.

PHRM 84600 - Principles Of Pharmacokinetics

Credit Hours: 3.00. This course introduces the theory and concepts of pharmacokinetics and biopharmaceutics. It provides the student with a foundation for more advanced therapeutic concepts in subsequent courses. The learner will develop expertise in quantifying drug absorption, distribution and elimination from concentration vs. time data or urinary drug excretion vs. time data to estimate primary pharmacokinetic parameters. Use of these parameters is required to design and modify individual drug-dosing regimens. Typically offered Fall.

PHRM 84800 - Principles Of Drug Information And Literature Evaluation

Credit Hours: 3.00. This course is designed to provide students with the fundamental skills needed for the provision of drug information in pharmacy practice. Emphasis is placed on the evaluation, interpretation, and practical implications of primary medical literature on the delivery of pharmaceutical care. Four recently published clinical trials will be reviewed and discussed throughout the semester to illustrate contemporary issues in the interpretation of biomedical research. Typically offered Fall.

17 Credits

Spring 2nd Year

PHRM 84100 - Professional Program Laboratory IV

Credit Hours: 1.00. Experiments, simulations, case studies, and problem sets that actively involve the student in problem-solving, applying and interrelating important concepts form the core courses taught that semester. Typically offered Spring.

PHRM 84500 - Integrated Pharmacotherapy III

Credit Hours: 6.00. This course will develop knowledge and skills regarding the physiology/ pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics/pharmaceutics, and pharmacotherapy of specific cardiovascular diseases, neurology diseases, and psychiatric disorders. Typically offered Spring.

PHRM 84700 - Principles Of Pharmacogenomics

Credit Hours: 2.00. Personalized treatment has been expected to sustainability reform the pharmacotherapy in next decades. There has been increased application of pharmacogenomics knowledge in clinical practice right now. Therefore, it is an urgent need to integrate the pharmacogenomic knowledge into the pharmacist education and training program to meet the immediate requirements in the current and future clinical practice. This course is designed to introduce new knowledge about the theory and concepts of pharmacogenomics and personalized medicine to professional pharmacy students for meeting the requirement for their Pharm D degree. Typically offered Spring.

PHRM 84900 - Population Health Management

Credit Hours: 2.00. This two-credit hour course aims to provide students with the core knowledge and basic skills used in managing the health of populations. Core content will include managed care principles, pharmacist involvement in managed care, and program designs. The course will also provide instruction in the topic areas of pharmacoepidemiology and pharmacoeconomics. Typically offered Spring.

- Electives - Credit Hours: 6.00

17 Credits

Fall 3rd Year

PHRM 86000 - Professional Program Laboratory V

Credit hours: 1.00. This course is an interdisciplinary laboratory course that presents a practical application of scientific and clinical knowledge in the context of patient-centered pharmaceutical care. Typically offered Fall.

PHRM 86200 - Institutional Pharmacy Introductory Pharmacy Practice Experience

Credit Hours: 4.00. A 4-credit hour required experiential course in the third year of the professional Doctor of Pharmacy program. Students learn basic institutional pharmacy operations and sterile product compounding. Typically offered Fall Spring Summer.

PHRM 86400 - Integrated Pharmacotherapy IV

Credit Hours: 6.00. This course will develop knowledge and skills regarding the physiology, pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics, pharmaceutics, and pharmacotherapeutics of oncology and hematologic malignancies, hepatic disorders, gastrointestinal disorders, and women's and men's health. This knowledge will be utilized in subsequent integrated pharmacotherapy modules, skills labs and practice experience that follow. Typically offered Fall.

PHRM 86600 - Biotech/Advanced Parenteral Dosage Forms

Credit Hours: 2.00. This course covers the different types of parenteral products derived from biotechnology. The lectures encompass the origin, chemical characteristics and therapeutic use of biopharmaceuticals. This course builds on the concepts and skills gained by the student from taking Dosage Forms II (PHRM 82900) and Professional Program Laboratory II (PHRM 82100). Typically offered Fall.

PHRM 86800 - Patient Safety And Informatics

Credit Hours: 3.00. This course provides core knowledge and skills needed by pharmacists to promote patient safety and use the tools of healthcare informatics; understand the landscape, epidemiology and culture of patient safety data privacy and security. Case studies will address disclosure of medication errors and reporting adverse events. Informatics tools such as computer order entry, electronic medical record systems, health information exchanges, and decision support will be explained. The use of informatics tools to promote patient safety will be emphasized. Typically offered Fall.

PHRM 87000 - Health Policy Applications

Credit Hours: 1.00. This course will explore policy issues that influence health care. The course will provide students opportunities to apply material from prior courses in Health Systems, Population Health Management, and Public Health is it relates to the impact of health policy. Students will gain an understanding of how policy development must address competing interests and goals, and how policy can influence the scope of pharmacist's professional roles. Timely materials on current policy, current policy debates, and professional advocacy will be discussed. Typically offered Fall.

17 Credits

Spring 3rd Year

PHRM 86100 - Professional Program Laboratory VI

Credit Hours: 1.00. This course is an interdisciplinary laboratory course that presents a practical application of scientific and clinical knowledge in the context of patient-centered pharmaceutical care. It serves as a one credit hour course. In accordance with university policy, this course may require up to three hours of work weekly outside of the arranged class time. Typically offered Spring.

PHRM 86500 - Integrated Pharmacotherapy V

Credit Hours: 6.00. This course provides an integrated approach to the physiology, pathophysiology, medicinal chemistry, pharmacology, pharmacokinetics, pharmacodynamics and pharmacotherapeutics of infectious diseases. It covers a vast array of microbiological pathogens, including bacteria, fungi, viruses, mycobacteria, parasites, protozoa and malaria. Typically offered Spring.

PHRM 86700 - Introduction To The Advanced Pharmacy Practice Experience

Credit Hours: 1.00. The Introduction to Advanced Pharmacy Practice Experience (APPE) course was designed to provide students with the tools needed to be successful clerkship students. Students will participate in a variety of activities, including case studies, group work, evaluations and assessment, review of therapeutic topics, and student/preceptor panel interactions. Activities will be supplemented by didactic lecturing for each topic. The activities and lecture topics were selected based on feedback from previous clerkship students, preceptors, and faculty, and are intended to "de-mystify" the clerkship experience. This course prepares students to enter the clerkship year with the ability to successfully submit required clerkship forms, evaluate preceptors and peers, avoid common clerkship student mistakes, document clinical interventions, review medical charts, and prepare for therapeutic and pharmacokinetic responsibilities. Typically offered Spring.

PHRM 86900 - Practice Management And Marketing Of Professional Services

Credit Hours: 2.00. Introduces essential pharmacy practice managerial skills including personnel management, addressing conflict, CQI, change management and leadership. Builds upon these skills in the development of a business plan to implement an innovative pharmacy service. Typically offered Spring.

PHRM 87100 - Jurisprudence

Credit Hours: 2.00. An in depth study of federal and Indiana laws, regulations, and rules affecting pharmacy practice. Primary emphasis is on Retail and Hospital Pharmacy settings. Lecture is supported by an instructor-created text covering the Food, Drug, and Cosmetic Act (21 USC), the Controlled Substances Act 21 CFR 1300 et. seq. and Indiana Food and Drug law IC 25-26-13 et. seq. and Indiana rules 856 IAC-1-43. Typically offered Spring.

- Electives - Credit Hours: 4.00

16 Credits

Summer, Fall, Spring 4th Year

Students complete a total of ten - four week rotations over the course of eleven months, beginning in May and ending the following April. Generally, students complete two rotations in the summer and four rotations in each subsequent semester.

PHRM 88000 - Advanced Pharmacy Practice Experience

Credit Hours: 4.00. This final year begins in May and continues through the following April. The 40 weeks of rotation are broken down as follows: 4 weeks Hospital Operations 2, 4 weeks Community Pharmacy Operations 2, 8 weeks Ambulatory rotations, 8 weeks inpatient rotations, and 16 weeks General Electives (4 of which must be additional patient care rotation). Typically offered Fall Spring Summer.

40 Credits

Note

ǂ Completion of pre-pharmacy requirements and admission to the PharmD program required. See College of Pharmacy website for admission criteria.

* IPPE - Course to be scheduled during either semester 1 or 2 (four weeks during spring or fall semester for P2 & P3 years)

** Proof of certification may be used to fulfill Immunization requirement, but students are still required to complete 140 total credit hours.

Students wishing to receive the Bachelor of Pharmaceutical Sciences in addition to the PharmD degree MUST complete University Core Curriculum Requirements. See Pharmaceutical Sciences and Pharmacy Studies Plans of Study for specific requirements.

Degree Requirements

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Pharmaceutical Sciences, BS

About the Program

The B.S. in Pharmaceutical Sciences (BSPS) begins with a foundation of coursework in mathematics and the basic sciences (chemistry, biology, physics). This interdisciplinary program then progresses to advanced coursework in the pharmaceutical sciences, including aspects of drug design and synthesis, mechanisms of drug action, pharmacology and toxicology, dosage formulation, manufacturing, quality assurance, and regulatory compliance. The curriculum also includes elective credits for individual preparation and educational focus.

The BSPS program offers practical experience through internship programs in industry, government agencies, and on-campus research laboratories. Students are encouraged to spend at least one summer in an internship.

The faculty also encourages undergraduate students to engage in mentored laboratory research. Numerous undergraduate research opportunities are available in the Department of Medicinal Chemistry and Molecular Pharmacology and in the Department of Industrial and Physical Pharmacy, during the regular school year and during the summer months as interns. Career path opportunities with a degree in pharmaceutical sciences include entry-level technical positions in the pharmaceutical and biotechnology industry; graduate education in pharmaceutical, medical, and basic sciences; and post-baccalaureate professional education in pharmacy, medicine, law, and business. You should recognize that this is not a professional degree program. Completion of the B.S. in Pharmaceutical Sciences degree requirements does not qualify the student for state board examination to become a registered pharmacist.

Pharmaceutical Sciences Website

Degree Requirements and Supplemental Information

The full Program Requirements for 2016-17 Pharmaceutical Sciences (B.S.) include all Supplemental Information and selective lists of those categories which a student must fulfill in order to earn their degree. These are intended to be printer-friendly, but include less descriptive course detail.

Please see below for program requirements and the necessary degree fulfillments.

Program: PHAR-BS
Major: PHAR
Credit Hours:120

Departmental/Program Major Courses (36 credits)

IPPH 10000 - Pharmaceutical Sciences Orientation

Credit Hours: 1.00. An orientation course for incoming freshmen or CODO students enrolled in the Bachelor of Sciences in the Pharmaceutical Sciences program. Provides an introduction to the scope of the program, the career opportunities for graduates, the curriculum rationale, and the faculty and staff support structure. Typically offered Fall.

MCMP 20400 - Organic Chemistry I

Credit Hours: 4.00. Organic chemistry; a study of the compounds of carbon on a functional group basis, with particular emphasis on those organic compounds of pharmaceutical and physiological importance; microlaboratory experiments involving the methods of purification, reactions, and synthesis of organic compounds. Typically offered Spring.

MCMP 20500 - Organic Chemistry II

Credit Hours: 4.00. Continuation of MCMP 20400. Typically offered Fall.

MCMP 20800 - Biochemistry For Pharmaceutical Sciences

Credit Hours: 3.00. The overall objectives of this course are to increase students' biomedical understanding and knowledge and their ability to apply that understanding and knowledge. This requires the students in this course to learn and understand the facts, concepts, and formulaic processes, and to become skilled at applying what they have learned. Typically offered Spring.

MCMP 42200 - Immunology

Credit Hours: 3.00. This course exposes students to the basic principles of immunology, teaches students to use those principles to understand the cause of immunological disease and the basis of immunoprophylaxis and immunotherapy, and provides students with sufficient information to understand the principles and challenges of gene therapy and the application of genomics to future drug development. Typically offered Spring.

MCMP 54400 - Drug Classes And Mechanisms

Credit Hours: 3.00. The course will integrate basic principles of medicinal chemistry and pharmacology to achieve an understanding of drug mechanisms as applied to autonomic/endocrine, cardiovascular/renal, CNS, and chemotherapy/infectious diseases. The course will apply concepts from organic chemistry, biochemistry, anatomy, physiology, and principles of drug action to describe how drugs are used to treat the symptoms and causes of disease. Typically offered Spring.

PHRM 46000 - Drug Discovery And Development I

Credit Hours: 3.00. Focuses on the strategies, current methods and technologies used in early stage pre-clinical research to disover, validate and select lead drug candidates. Typically offered Fall.

PHRM 46100 - Drug Discovery And Development II

Credit Hours: 3.00. The course focuses on the process of drug development from pre-formulation to unit operations. The emphasis is on the scientific principles behind every step in moving from a drug molecule to its products. Typically offered Spring.

PHRM 48500 - Intercultural And Global Health Issues

Credit Hours: 2.00. This course is designed to meet the University Embedded Outcomes of Intercultural Knowledge, and Global Citizenship and Social Awareness. Students will discuss and develop presentations (verbal and written) about various intercultural and global health issues. Typically offered Spring.

PHRM 82400 - Principles Of Pathophysiology And Drug Action

Credit Hours: 3.00. This course introduces the basic principles of pathophysiology, pharmacodynamics, toxicology and medicinal chemistry necessary to understand the therapeutic use and adverse actions of drugs. The course will integrate and apply concepts of science courses, including organic chemistry, biochemistry, anatomy and physiology into an understanding of the basic fundamentals of disease processes, toxicology and drug actions. Thus, this course will provide students with the basic background necessary to understand and apply pharmacotherapeutics to the practice of pharmacy. Prerequisite: MCMP 20400, MCMP 20500, MCMP 20800, and BIOL 20300, BIOL 20400 or BIOL 30100, BIOL 30200. Departmental permission required. Typically offered Fall.

PHRM 82800 - Dosage Forms I

Credit Hours: 3.00. The purpose of Dosage Forms I is to provide a foundation in the basic concepts of pharmaceutics that are the foundation of drug delivery. The course begins by presenting the molecular basis for aqueous and lipid solubility of drugs, pharmacokinetic principles that are related to dosage forms, mechanisms by which excipients or manufacturing processes affect bioavailability, and chemical kinetics applied to the shelf-life of dosage forms. The pharmaceutics principles are then applied to successively more complex liquid dosage forms: solution, emulsion, and suspension. The excipients that are required to prepare the dosage forms: buffers, preservatives, emulsifiers, suspending agents, wetting agents, etc. and the method of preparing each dosage form in both a compounding and manufacturing setting are covered. Typically offered Fall.

PHRM 82900 - Dosage Forms II

Credit Hours: 2.00. Education in the use of dosage forms to deliver drugs. Collaboration with peers and other members of the health care team regarding the proper use of the various dosage forms so that the desired therapeutic objective is achieved. Typically offered Spring.

PHRM 83600 - Biochemistry For Pharmaceutical Sciences II

Credit Hours: 2.00. This course provides instruction in biochemistry that builds on basic knowledge by presenting content on advanced aspects of human biochemistry for students in pharmaceutical sciences. The content emphasizes the integration of biochemical knowledge and the application of biochemical understanding to medically relevant situations including disease etiology, medical diagnosis, disease research, drug discovery, drug and toxin mechanisms of action, and mechanism of drug metabolism. Typically offered Fall.

Pharmacy Special Interest Selective courses (6 credits)

- Pharmacy Special Interest Selective (select from list)
- Pharmacy Special Interest Selective (select from list)

Other Departmental/Program Course Requirements (59 credits)

AGEC 21700 - Economics

Credit Hours: 3.00. National economic problems such as unemployment, recessions, inflation, taxation, bank interest rates, the growth of government, monetary systems, and a rising national debt are discussed along with the principles, policies, and institutions for solving these macroeconomic problems. Typically offered Fall Spring Summer.

BIOL 11000 - Fundamentals Of Biology I

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Principles of biology, focusing on diversity, ecology, evolution, and the development, structure, and function of organisms. Typically offered Summer Fall Spring.

BIOL 11100 - Fundamentals Of Biology II

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Continuation of BIOL 11000. Principles of biology, focusing on cell structure and function, molecular biology, and genetics. Typically offered Fall Spring.

BIOL 22100 - Introduction To Microbiology

Credit Hours: 4.00. The isolation, growth, structure, function, heredity, identification, classification, and ecology of microorganisms; their role in nature; and significance to man. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Fall Spring. CTL: Microbiology for the Health Sciences

BIOL 30100 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A study of human function, emphasizing physiology of body tissues and systems. Relevant aspects of anatomy and histology are also included. Use of examples from current medical practice encourages application of knowledge to predict symptoms of disease and rationale for treatment. Topics covered include histophysiology of cells and tissues, nerve and muscle physiology, the nervous system, and cardiovascular dynamics. Typically offered Fall.

BIOL 30200 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A continuation of BIOL 30100. (It is helpful but not essential for this course to be preceded by BIOL 30100.) Topics covered include body fluids and renal function, respiration, endocrine systems, the gastro-intestinal system, exercise physiology, reproduction, and immunity. Typically offered Spring.

CHM 12901 - General Chemistry With A Biological Focus

Credit Hours: 5.00. An accelerated and comprehensive one-semester general chemistry course that emphasizes principles that are important in biological systems. This course is designed to cover the essential elements of general chemistry traditionally covered in a two semester series. Topics to be covered include: Stoichiometry and chemical equations; atomic theory and structure; periodic properties; electronegativity; ionic and covalent bonding; non-covalent forces; bond energies; Lewis structures; molecular geometry; gases, liquids, and solids; solutions, quantitative equilibria in aqueous solution; acid/base chemistry and buffers; introductory thermodynamics; oxidation-reduction; electrochemical and membrane potential; colligative properties; chemical and enzyme kinetics; nuclear chemistry; coordination chemistry. One year of high school chemistry is required. Typically offered Fall.

CHM 37200 - Physical Chemistry

Credit Hours: 4.00. Principles of physical chemistry with emphasis on chemical thermodynamics and kinetics, illustrated examples from the biological sciences. Intended primarily for students in the life sciences. Typically offered Spring.

COM 11400 - Fundamentals Of Speech Communication

Credit Hours: 3.00. A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400. CTL:ICM 1103 Fundamentals Of Public Speaking

ENGL 10600 - First-Year Composition

Credit Hours: 4.00. Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research-based writing. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400.

ENGL 42100 - Technical Writing

Credit Hours: 3.00. Workplace writing in networked environments for technical contexts. Emphasizes context and user analysis, data analysis/display, project planning, document management, usability, ethics, research, team writing. Typical genres include technical reports, memos, documentation, Web sites. Typically offered Fall Spring Summer.

- Humanities/Social Science Selective (select from list) **(satisfies Human Cultures Humanities Selective for core)** - Credit Hours: 3.00

MA 16010 - Applied Calculus I

Credit Hours: 3.00. Topics include trigonometric and exponential functions; limits and differentiation, rules of differentiation, maxima, minima and optimization; curve sketching, integration, anti-derivatives, fundamental theorem of calculus. Properties of definite integrals and numerical methods. Applications to life, managerial and social sciences. Typically offered Fall Spring Summer.

MA 16020 - Applied Calculus II

Credit Hours: 3.00. This course covers techniques of integration; infinite series, convergence tests; differentiation and integration of functions of several variables; maxima and minima, optimization; differential equations and initial value problems; matrices, determinants, eigenvalues and eigenvectors. Applications. Typically offered Fall Spring Summer.

PHYS 22000 - General Physics

Credit Hours: 4.00. Mechanics, heat, and sound, for students not specializing in physics. Typically offered Fall Spring Summer. CTL:IPS 1751 Algebra-based Physics I

- Science, Technology & Society Selective (select from list) **(satisfies Science, Tech. & Society Selective for core)** - Credit Hours: 3.00

STAT 30100 - Elementary Statistical Methods

Credit Hours: 3.00. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, 35000, 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: college algebra. Typically offered Summer Fall Spring.

Electives (19 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning
- For a complete listing of course selectives, visit the Provost's Website or click here.

Program Requirements

Fall 1st Year

First Semester

BIOL 11000 - Fundamentals Of Biology I

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Principles of biology, focusing on diversity, ecology, evolution, and the development, structure, and function of organisms. Typically offered Summer Fall Spring.

CHM 12901 - General Chemistry With A Biological Focus

Credit Hours: 5.00. An accelerated and comprehensive one-semester general chemistry course that emphasizes principles that are important in biological systems. This course is designed to cover the essential elements of general chemistry traditionally covered in a two semester series. Topics to be covered include: Stoichiometry and chemical equations; atomic theory and structure; periodic properties; electronegativity; ionic and covalent bonding; non-covalent forces; bond energies; Lewis structures; molecular geometry; gases, liquids, and solids; solutions, quantitative equilibria in aqueous solution; acid/base chemistry and buffers; introductory thermodynamics; oxidation-reduction; electrochemical and membrane potential; colligative properties; chemical and enzyme kinetics; nuclear chemistry; coordination chemistry. One year of high school chemistry is required. Typically offered Fall.

COM 11400 - Fundamentals Of Speech Communication

Credit Hours: 3.00. A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400. CTL:ICM 1103 Fundamentals Of Public Speaking

MA 16010 - Applied Calculus I

Credit Hours: 3.00. Topics include trigonometric and exponential functions; limits and differentiation, rules of differentiation, maxima, minima and optimization; curve sketching, integration, anti-derivatives, fundamental theorem of calculus. Properties of definite integrals and numerical methods. Applications to life, managerial and social sciences. Typically offered Fall Spring Summer.

IPPH 10000 - Pharmaceutical Sciences Orientation

Credit Hours: 1.00. An orientation course for incoming freshmen or CODO students enrolled in the Bachelor of Sciences in the Pharmaceutical Sciences program. Provides an introduction to the scope of the program, the career opportunities for graduates, the curriculum rationale, and the faculty and staff support structure. Typically offered Fall.

16 Credits

Spring 1st Year

Second Semester

BIOL 11100 - Fundamentals Of Biology II

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Continuation of BIOL 11000. Principles of biology, focusing on cell structure and function, molecular biology, and genetics. Typically offered Fall Spring.

ENGL 10600 - First-Year Composition

Credit Hours: 4.00. Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research-based writing. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400.

MA 16020 - Applied Calculus II

Credit Hours: 3.00. This course covers techniques of integration; infinite series, convergence tests; differentiation and integration of functions of several variables; maxima and minima, optimization; differential equations and initial value problems; matrices, determinants, eigenvalues and eigenvectors. Applications. Typically offered Fall Spring Summer.

MCMP 20400 - Organic Chemistry I

Credit Hours: 4.00. Organic chemistry; a study of the compounds of carbon on a functional group basis, with particular emphasis on those organic compounds of pharmaceutical and physiological importance; microlaboratory experiments involving the methods of purification, reactions, and synthesis of organic compounds. Typically offered Spring.

15 Credits

Fall 2nd Year ǂ

Third Semester

BIOL 30100 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A study of human function, emphasizing physiology of body tissues and systems. Relevant aspects of anatomy and histology are also included. Use of examples from current medical practice encourages application of knowledge to predict symptoms of disease and rationale for treatment. Topics covered include histophysiology of cells and tissues, nerve and muscle physiology, the nervous system, and cardiovascular dynamics. Typically offered Fall.

MCMP 20500 - Organic Chemistry II

Credit Hours: 4.00. Continuation of MCMP 20400. Typically offered Fall.

PHYS 22000 - General Physics

Credit Hours: 4.00. Mechanics, heat, and sound, for students not specializing in physics. Typically offered Fall Spring Summer. CTL:IPS 1751 Algebra-based Physics I

STAT 30100 - Elementary Statistical Methods

Credit Hours: 3.00. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, 35000, 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: college algebra. Typically offered Summer Fall Spring.

14 Credits

Spring 2nd Year

Fourth Semester

BIOL 22100 - Introduction To Microbiology

Credit Hours: 4.00. The isolation, growth, structure, function, heredity, identification, classification, and ecology of microorganisms; their role in nature; and significance to man. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Fall Spring. CTL: Microbiology for the Health Sciences

BIOL 30200 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A continuation of BIOL 30100. (It is helpful but not essential for this course to be preceded by BIOL 30100.) Topics covered include body fluids and renal function, respiration, endocrine systems, the gastro-intestinal system, exercise physiology, reproduction, and immunity. Typically offered Spring.

MCMP 20800 - Biochemistry For Pharmaceutical Sciences

Credit Hours: 3.00. The overall objectives of this course are to increase students' biomedical understanding and knowledge and their ability to apply that understanding and knowledge. This requires the students in this course to learn and understand the facts, concepts, and formulaic processes, and to become skilled at applying what they have learned. Typically offered Spring.

MCMP 42200 - Immunology

Credit Hours: 3.00. This course exposes students to the basic principles of immunology, teaches students to use those principles to understand the cause of immunological disease and the basis of immunoprophylaxis and immunotherapy, and provides students with sufficient information to understand the principles and challenges of gene therapy and the application of genomics to future drug development. Typically offered Spring.

AGEC 21700 - Economics

Credit Hours: 3.00. National economic problems such as unemployment, recessions, inflation, taxation, bank interest rates, the growth of government, monetary systems, and a rising national debt are discussed along with the principles, policies, and institutions for solving these macroeconomic problems. Typically offered Fall Spring Summer.

16 Credits

Fall 3rd Year

Fifth Semester

PHRM 82400 - Principles Of Pathophysiology And Drug Action

Credit Hours: 3.00. This course introduces the basic principles of pathophysiology, pharmacodynamics, toxicology and medicinal chemistry necessary to understand the therapeutic use and adverse actions of drugs. The course will integrate and apply concepts of science courses, including organic chemistry, biochemistry, anatomy and physiology into an understanding of the basic fundamentals of disease processes, toxicology and drug actions. Thus, this course will provide students with the basic background necessary to understand and apply pharmacotherapeutics to the practice of pharmacy. Prerequisite: MCMP 20400, MCMP 20500, MCMP 20800, and BIOL 20300, BIOL 20400 or BIOL 30100, BIOL 30200. Departmental permission required. Typically offered Fall.

PHRM 82800 - Dosage Forms I

Credit Hours: 3.00. The purpose of Dosage Forms I is to provide a foundation in the basic concepts of pharmaceutics that are the foundation of drug delivery. The course begins by presenting the molecular basis for aqueous and lipid solubility of drugs, pharmacokinetic principles that are related to dosage forms, mechanisms by which excipients or manufacturing processes affect bioavailability, and chemical kinetics applied to the shelf-life of dosage forms. The pharmaceutics principles are then applied to successively more complex liquid dosage forms: solution, emulsion, and suspension. The excipients that are required to prepare the dosage forms: buffers, preservatives, emulsifiers, suspending agents, wetting agents, etc. and the method of preparing each dosage form in both a compounding and manufacturing setting are covered. Typically offered Fall.

PHRM 83600 - Biochemistry For Pharmaceutical Sciences II

Credit Hours: 2.00. This course provides instruction in biochemistry that builds on basic knowledge by presenting content on advanced aspects of human biochemistry for students in pharmaceutical sciences. The content emphasizes the integration of biochemical knowledge and the application of biochemical understanding to medically relevant situations including disease etiology, medical diagnosis, disease research, drug discovery, drug and toxin mechanisms of action, and mechanism of drug metabolism. Typically offered Fall.

- Elective - Credit Hours: 3.00
- Humanities Selective - Credit Hours: 3.00 *

14 Credits

Spring 3rd Year

Sixth Semester

CHM 37200 - Physical Chemistry

Credit Hours: 4.00. Principles of physical chemistry with emphasis on chemical thermodynamics and kinetics, illustrated examples from the biological sciences. Intended primarily for students in the life sciences. Typically offered Spring.

ENGL 42100 - Technical Writing

Credit Hours: 3.00. Workplace writing in networked environments for technical contexts. Emphasizes context and user analysis, data analysis/display, project planning, document management, usability, ethics, research, team writing. Typical genres include technical reports, memos, documentation, Web sites. Typically offered Fall Spring Summer.

PHRM 82900 - Dosage Forms II

Credit Hours: 2.00. Education in the use of dosage forms to deliver drugs. Collaboration with peers and other members of the health care team regarding the proper use of the various dosage forms so that the desired therapeutic objective is achieved. Typically offered Spring.

- Pharmacy Special Interest Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

Seventh Semester

PHRM 46000 - Drug Discovery And Development I

Credit Hours: 3.00. Focuses on the strategies, current methods and technologies used in early stage pre-clinical research to disover, validate and select lead drug candidates. Typically offered Fall.

- Pharmacy Special Interest Selective - Credit Hours: 3.00
- Science, Technology & Social Science Selective - Credit Hours: 3.00 *
- Electives - Credit Hours: 6.00

15 Credits

Spring 4th Year

Eighth Semester

MCMP 54400 - Drug Classes And Mechanisms

Credit Hours: 3.00. The course will integrate basic principles of medicinal chemistry and pharmacology to achieve an understanding of drug mechanisms as applied to autonomic/endocrine, cardiovascular/renal, CNS, and chemotherapy/infectious diseases. The course will apply concepts from organic chemistry, biochemistry, anatomy, physiology, and principles of drug action to describe how drugs are used to treat the symptoms and causes of disease. Typically offered Spring.

PHRM 46100 - Drug Discovery And Development II

Credit Hours: 3.00. The course focuses on the process of drug development from pre-formulation to unit operations. The emphasis is on the scientific principles behind every step in moving from a drug molecule to its products. Typically offered Spring.

PHRM 48500 - Intercultural And Global Health Issues

Credit Hours: 2.00. This course is designed to meet the University Embedded Outcomes of Intercultural Knowledge, and Global Citizenship and Social Awareness. Students will discuss and develop presentations (verbal and written) about various intercultural and global health issues. Typically offered Spring.

- Electives - Credit Hours: 7.00

15 Credits

Note

*Fulfills University Undergraduate Core Curriculum Requirement.

Foreign Language Courses

Foreign Language proficiency requirements vary by program. For acceptable languages and proficiency levels, see your advisor:

American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Pre-Pharmacy ǂ

About the Program

The Pre-Doctor of Pharmacy program is a two-year, non-degree program. Although the emphasis of the coursework is focused on biology, chemistry, physics, and math, Pre-Pharmacy students are also required to take a course apiece in composition and economics.

This plan of study is specifically designed for students preparing to apply for admission to the Doctor of Pharmacy (PharmD) program. **This is a non-degree seeking curriculum. Also note that admission into and completion of the Pre-Pharmacy program does not guarantee admission into Purdue's four-year PharmD program.**

Because of the accelerated pace of our Pre-Doctor of Pharmacy program (our peer university's pre-pharmacy programs are four years), students incur two years less debt and get onto the job market two years faster.

Degree Requirements and Supplemental Information

The full Program Requirements for 2016-17 Pre-Pharmacy Program include all Supplemental Information and selective lists of those categories which a student must fulfill in order to earn their degree. These are intended to be printer-friendly, but include less descriptive course detail.

Please see below for program requirements and the necessary degree fulfillments.

Program: Pre-Phar

Major: PRPP

Credit Hours: 62

Departmental/Program Major Courses (16 credits)

MCMP 20400 - Organic Chemistry I

Credit Hours: 4.00. Organic chemistry; a study of the compounds of carbon on a functional group basis, with particular emphasis on those organic compounds of pharmaceutical and physiological importance; microlaboratory experiments involving the methods of purification, reactions, and synthesis of organic compounds. Typically offered Spring.

MCMP 20500 - Organic Chemistry II

Credit Hours: 4.00. Continuation of MCMP 20400. Typically offered Fall.

MCMP 20800 - Biochemistry For Pharmaceutical Sciences

Credit Hours: 3.00. The overall objectives of this course are to increase students' biomedical understanding and knowledge and their ability to apply that understanding and knowledge. This requires the students in this course to learn and understand the facts, concepts, and formulaic processes, and to become skilled at applying what they have learned. Typically offered Spring.

MCMP 42200 - Immunology

Credit Hours: 3.00. This course exposes students to the basic principles of immunology, teaches students to use those principles to understand the cause of immunological disease and the basis of immunoprophylaxis and immunotherapy, and provides students with sufficient information to understand the principles and challenges of gene therapy and the application of genomics to future drug development. Typically offered Spring.

PHRM 10000 - Pharmacy Orientation I

Credit Hours: 1.00. This first semester pre-pharmacy course is designed to provide the pre-pharmacy student with an introduction to the profession of pharmacy and to Purdue University College of Pharmacy. The topics presented in this course will allow the pre-pharmacy students to develop informed perspectives on: pharmacy summer employment opportunities for students; pharmacy career opportunities; current pharmacy practice trends; the importance of professionalism, values, and ethics as it pertains to the profession; resume and cover letter development; the College's curriculum, admissions process, and course registration process. Typically offered Fall.

PHRM 20000 - Pharmacy Orientation II

Credit Hours: 1.00. A second orientation course to provide students interested in pre-pharmacy an introduction to the profession of pharmacy and to the Purdue University College of Pharmacy. Topics include personal development, academic program and career planning,

pharmacy career opportunities, professionalism and ethics, and the Pharm.D. curriculum and the pharmacy admissions process. The course builds on PHRM 10000, but students are not required to have taken that course in order to enroll in this course. Typically offered Fall.

Other Departmental/Program Course Requirements (46 credits)

AGEC 21700 - Economics

Credit Hours: 3.00. National economic problems such as unemployment, recessions, inflation, taxation, bank interest rates, the growth of government, monetary systems, and a rising national debt are discussed along with the principles, policies, and institutions for solving these macroeconomic problems. Typically offered Fall Spring Summer.

BIOL 11000 - Fundamentals Of Biology I

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Principles of biology, focusing on diversity, ecology, evolution, and the development, structure, and function of organisms. Typically offered Summer Fall Spring.

BIOL 11100 - Fundamentals Of Biology II

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Continuation of BIOL 11000. Principles of biology, focusing on cell structure and function, molecular biology, and genetics. Typically offered Fall Spring.

BIOL 22100 - Introduction To Microbiology

Credit Hours: 4.00. The isolation, growth, structure, function, heredity, identification, classification, and ecology of microorganisms; their role in nature; and significance to man. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Fall Spring. CTL: Microbiology for the Health Sciences

BIOL 30100 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A study of human function, emphasizing physiology of body tissues and systems. Relevant aspects of anatomy and histology are also included. Use of examples from current medical practice encourages application of knowledge to predict symptoms of disease and rationale for treatment. Topics covered include histophysiology of cells and tissues, nerve and muscle physiology, the nervous system, and cardiovascular dynamics. Typically offered Fall.

BIOL 30200 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A continuation of BIOL 30100. (It is helpful but not essential for this course to be preceded by BIOL 30100.) Topics covered include body fluids and renal function, respiration, endocrine systems, the gastro-intestinal system, exercise physiology, reproduction, and immunity. Typically offered Spring.

CHM 12901 - General Chemistry With A Biological Focus

Credit Hours: 5.00. An accelerated and comprehensive one-semester general chemistry course that emphasizes principles that are important in biological systems. This course is designed to cover the essential elements of general chemistry traditionally covered in a two semester series. Topics to be covered include: Stoichiometry and chemical equations; atomic theory and structure; periodic properties; electronegativity; ionic and covalent bonding; non-covalent forces; bond energies; Lewis structures; molecular geometry; gases, liquids, and solids; solutions, quantitative equilibria in aqueous solution; acid/base chemistry and buffers; introductory thermodynamics; oxidation-reduction; electrochemical and membrane potential; colligative properties; chemical and enzyme kinetics; nuclear chemistry; coordination chemistry. One year of high school chemistry is required. Typically offered Fall.

ENGL 10600 - First-Year Composition

Credit Hours: 4.00. Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research-based writing. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400.

MA 16010 - Applied Calculus I

Credit Hours: 3.00. Topics include trigonometric and exponential functions; limits and differentiation, rules of differentiation, maxima, minima and optimization; curve sketching, integration, anti-derivatives, fundamental theorem of calculus. Properties of definite integrals and numerical methods. Applications to life, managerial and social sciences. Typically offered Fall Spring Summer.

MA 16020 - Applied Calculus II

Credit Hours: 3.00. This course covers techniques of integration; infinite series, convergence tests; differentiation and integration of functions of several variables; maxima and minima, optimization; differential equations and initial value problems; matrices, determinants, eigenvalues and eigenvectors. Applications. Typically offered Fall Spring Summer.

PHYS 22000 - General Physics

Credit Hours: 4.00. Mechanics, heat, and sound, for students not specializing in physics. Typically offered Fall Spring Summer. CTL:IPS 1751 Algebra-based Physics I

STAT 30100 - Elementary Statistical Methods

Credit Hours: 3.00. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, 35000, 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: college algebra. Typically offered Summer Fall Spring.

COM 11400 - Fundamentals Of Speech Communication

Credit Hours: 3.00. A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400. CTL:ICM 1103 Fundamentals Of Public Speaking

Program Requirements

♯ This is a non-degree seeking curriculum - Admission to the Professional Program or completion of alternative major required.

Fall 1st Year

BIOL 11000 - Fundamentals Of Biology I

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Principles of biology, focusing on diversity, ecology, evolution, and the development, structure, and function of organisms. Typically offered Summer Fall Spring.

CHM 12901 - General Chemistry With A Biological Focus

Credit Hours: 5.00. An accelerated and comprehensive one-semester general chemistry course that emphasizes principles that are important in biological systems. This course is designed to cover the essential elements of general chemistry traditionally covered in a two semester series. Topics to be covered include: Stoichiometry and chemical equations; atomic theory and structure; periodic properties; electronegativity; ionic and covalent bonding; non-covalent forces; bond energies; Lewis structures; molecular geometry; gases, liquids, and solids; solutions, quantitative equilibria in aqueous solution; acid/base chemistry and buffers; introductory thermodynamics; oxidation-reduction; electrochemical and membrane potential; colligative properties; chemical and enzyme kinetics; nuclear chemistry; coordination chemistry. One year of high school chemistry is required. Typically offered Fall.

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MA 16010 - Applied Calculus I

Credit Hours: 3.00. Topics include trigonometric and exponential functions; limits and differentiation, rules of differentiation, maxima, minima and optimization; curve sketching, integration, anti-derivatives, fundamental theorem of calculus. Properties of definite integrals and numerical methods. Applications to life, managerial and social sciences. Typically offered Fall Spring Summer.

PHRM 10000 - Pharmacy Orientation I

Credit Hours: 1.00. This first semester pre-pharmacy course is designed to provide the pre-pharmacy student with an introduction to the profession of pharmacy and to Purdue University College of Pharmacy. The topics presented in this course will allow the pre-pharmacy students to develop informed perspectives on: pharmacy summer employment opportunities for students; pharmacy career opportunities; current pharmacy practice trends; the importance of professionalism, values, and ethics as it pertains to the profession; resume and cover letter development; the College's curriculum, admissions process, and course registration process. Typically offered Fall.

16 Credits

Spring 1st Year

BIOL 11100 - Fundamentals Of Biology II

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Continuation of BIOL 11000. Principles of biology, focusing on cell structure and function, molecular biology, and genetics. Typically offered Fall Spring.

ENGL 10600 - First-Year Composition

Credit Hours: 4.00. Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research-based writing. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400.

MA 16020 - Applied Calculus II

Credit Hours: 3.00. This course covers techniques of integration; infinite series, convergence tests; differentiation and integration of functions of several variables; maxima and minima, optimization; differential equations and initial value problems; matrices, determinants, eigenvalues and eigenvectors. Applications. Typically offered Fall Spring Summer.

MCMP 20400 - Organic Chemistry I

Credit Hours: 4.00. Organic chemistry; a study of the compounds of carbon on a functional group basis, with particular emphasis on those organic compounds of pharmaceutical and physiological importance; microlaboratory experiments involving the methods of purification, reactions, and synthesis of organic compounds. Typically offered Spring.

15 Credits

Fall 2nd Year

BIOL 30100 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A study of human function, emphasizing physiology of body tissues and systems. Relevant aspects of anatomy and histology are also included. Use of examples from current medical practice encourages application of knowledge to predict symptoms of disease and rationale for treatment. Topics covered include histophysiology of cells and tissues, nerve and muscle physiology, the nervous system, and cardiovascular dynamics. Typically offered Fall.

MCMP 20500 - Organic Chemistry II

Credit Hours: 4.00. Continuation of MCMP 20400. Typically offered Fall.

PHRM 20000 - Pharmacy Orientation II

Credit Hours: 1.00. A second orientation course to provide students interested in pre-pharmacy an introduction to the profession of pharmacy and to the Purdue University College of Pharmacy. Topics include personal development, academic program and career planning, pharmacy career opportunities, professionalism and ethics, and the Pharm.D. curriculum and the pharmacy admissions process. The course builds on PHRM 10000, but students are not required to have taken that course in order to enroll in this course. Typically offered Fall.

PHYS 22000 - General Physics

Credit Hours: 4.00. Mechanics, heat, and sound, for students not specializing in physics. Typically offered Fall Spring Summer. CTL:IPS 1751 Algebra-based Physics I

STAT 30100 - Elementary Statistical Methods

Credit Hours: 3.00. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, 35000, 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: college algebra. Typically offered Summer Fall Spring.

15 Credits

Spring 2nd Year

AGEC 21700 - Economics

Credit Hours: 3.00. National economic problems such as unemployment, recessions, inflation, taxation, bank interest rates, the growth of government, monetary systems, and a rising national debt are discussed along with the principles, policies, and institutions for solving these macroeconomic problems. Typically offered Fall Spring Summer.

BIOL 22100 - Introduction To Microbiology

Credit Hours: 4.00. The isolation, growth, structure, function, heredity, identification, classification, and ecology of microorganisms; their role in nature; and significance to man. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Fall Spring. CTL: Microbiology for the Health Sciences

BIOL 30200 - Human Design: Anatomy And Physiology

Credit Hours: 3.00. A continuation of BIOL 30100. (It is helpful but not essential for this course to be preceded by BIOL 30100.) Topics covered include body fluids and renal function, respiration, endocrine systems, the gastro-intestinal system, exercise physiology, reproduction, and immunity. Typically offered Spring.

MCMP 20800 - Biochemistry For Pharmaceutical Sciences

Credit Hours: 3.00. The overall objectives of this course are to increase students' biomedical understanding and knowledge and their ability to apply that understanding and knowledge. This requires the students in this course to learn and understand the facts, concepts, and formulaic processes, and to become skilled at applying what they have learned. Typically offered Spring.

MCMP 42200 - Immunology

Credit Hours: 3.00. This course exposes students to the basic principles of immunology, teaches students to use those principles to understand the cause of immunological disease and the basis of immunoprophylaxis and immunotherapy, and provides students with sufficient information to understand the principles and challenges of gene therapy and the application of genomics to future drug development. Typically offered Spring.

16 Credits

Note

*Fulfills University Core Curriculum (UCC) requirements. Pre-Pharmacy students are exempt from completing (UCC) requirements, however, students who CODO to alternative undergraduate degrees will be required to complete the UCC.

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The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

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Foreign Language Courses

Foreign Language proficiency requirements vary by program. For acceptable languages and proficiency levels, see your advisor:

American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Department of Industrial and Physical Pharmacy

Overview

The Department of Industrial & Physical Pharmacy (IPPH) is involved in teaching and research in pharmaceutics, with emphasis on the following three minors: industrial pharmacy, pharmacokinetics/biopharmaceutics, and physical pharmacy.

Welcome to the Purdue University Department of Industrial and Physical Pharmacy! This is the place to find out more about our department's ongoing research, graduate degree programs, recent news and upcoming events.

Our mission is:

- **to educate and train students** to become leading pharmaceutical scientists and pharmacists
- **to advance scientific discovery and development**, with an emphasis on pharmaceutical formulation, manufacturing and drug delivery, and
- **to contribute** to the advancement of the pharmaceutical sciences through outreach and public service.

We're an academic department within the College of Pharmacy, located in the R. E. Heine Pharmacy Building (RHPH) on the main (West Lafayette) campus of Purdue University. For contact information, please see the Administration page.

Elizabeth M. Topp, Ph.D.
Dane O. Kildsig Chair and Department Head
Dept. of Industrial and Physical Pharmacy

Faculty

http://www.ipph.purdue.edu/faculty/

Contact Information

Industrial and Physical Pharmacy

Contact Information
Phone: (765) 494-1450
Fax: (765) 494-6545
Office: Room 124 Robert E. Heine Pharmacy Building

Postal address:
Department of Industrial and Physical Pharmacy, Purdue University
Heine Pharmacy Building
575 Stadium Mall Drive
West Lafayette, IN 47907-2091

Campus Mail Address:
IPPH, RHPH

Graduate Information

For Graduate Information please see Industrial and Physical Pharmacy Graduate Program Information.

Department of Medicinal Chemistry and Molecular Pharmacology

Overview

The mission of the Department of Medicinal Chemistry and Molecular Pharmacology (MCMP) is to serve the citizens of Indiana, the United States and the world through discovery, learning and engagement that integrates the basic chemical and biological sciences for the improvement of human health. The Department of MCMP is an academic department in the College of Pharmacy. It is located in the R. E. Heine Pharmacy Building (RHPH) and in the Arthur E. Hansen Building (HANS) on the main (West Lafayette) campus of Purdue University.

Faculty

http://www.mcmp.purdue.edu/faculty/

Contact Information

Medicinal Chemistry and Molecular Pharmacology

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Purdue University
R. E. Heine Building
575 Stadium Mall Drive
West Lafayette, IN 47907-2091

Campus Mail Address

MCMP, RHPH

Main Office

Room 202, Robert E. Heine Pharmacy Building
Phone: (765) 49-41403
Fax: (765) 49-41414

Graduate Program Inquiry

Phone: (800) 563-3568
Email: mcmp_grad_prog@pharmacy.purdue.edu

Graduate Information

For Graduate Information please see Medicinal Chemistry and Molecular Pharmacology Graduate Program Information.

Department of Pharmacy Practice

Overview

The Department of Pharmacy Practice (PHPR) at Purdue University is an academic department in the College of Pharmacy. It is located in the R. E. Heine Pharmacy Building on the main (West Lafayette) campus of the University and also has facilities in Sidney & Lois Eskenazi Hospital on the Indiana University Medical Center campus in Indianapolis. See the Administration page for information on how to contact the Department of Pharmacy Practice.

The mission of the Department of Pharmacy Practice is to demonstrate excellence through performance in the areas of discovery, learning, and engagement. The Department consists of 26 tenure-track faculty, 11 clinical faculty, and over 600 affiliate faculty preceptors. Many faculty practice in specialized areas such as: drug information, critical care, ambulatory medicine, cardiology, outcomes research, infectious disease, pharmacokinetics/pharmacodynamics, managed care, and pharmacy administration.

The experience and knowledge of the faculty of the Department of Pharmacy Practice enable professional degree students to receive excellent didactic and experiential training necessary to become well-rounded practitioners. The professional curriculum includes general, scientific, and patient centered content that prepares Doctor of Pharmacy graduates to deliver effective and cost-efficient pharmaceutical care.

The Department of Pharmacy Practice supports the College of Pharmacy's vision by:

- Providing education to students that enables them to acquire in-depth expertise in the pharmaceutical, social/economic management, and related sciences in order to function as educators and scientists in higher education, government service, and the pharmaceutical and healthcare industries
- Serving the community by engaging in scholarly activities that lead to improvements in healthcare delivery and enhance health outcomes
- Fostering innovation in research through interdisciplinary collaboration with other schools/colleges within Purdue, other national/international universities, and pharmacy practitioners to enhance to profession body of knowledge resulting in practice advancement
- Contributing to the profession of pharmacy by participation in leadership roles in pharmaceutical organizations and community programs

The Department also has extensive research opportunities for graduate and post-graduate pharmacists leading to M.S. and Ph.D. degrees in either Clinical Pharmaceutical Sciences or Pharmacy Administration. The Graduate Academic Program is directed toward the education and maturation of pharmacists in principles and techniques of research dealing with problems in the clinical, administrative, and educational aspects of pharmacy. These programs also encourage students to develop sound teaching techniques through appropriate coursework and supervised experience.

Pharmaceutical Sciences Website

Graduate Information

For Graduate Information please see Pharmacy Practice Graduate Program Information.