

Pharmaceutical Sciences

The pharmaceutical sciences are made up of the following disciplines: medicinal chemistry and pharmacognosy, pharmaceuticals, pharmacology and toxicology, and pharmaceutical administration. The students in the Bachelor of Science in the Pharmaceutical Sciences (B.S.P.S.) will study the exciting areas of drug discovery, drug delivery, drug action, drug distribution, and pharmacoconomics. This program is a four-year undergraduate curriculum which will help build a strong science foundation, develop essential laboratory skills, and provide the experience and training necessary for graduate education, graduate professional education, or a health-related career.

Pharmaceuticals have never before been such an important component of our health care system and economy. New discoveries are being made at an astonishing rate, and the use of medication is the most common form of medical treatment. This industry generates billions of dollars each year and demands top researchers and professionals in drug development marketing, economics, regulatory affairs, and clinical affairs.

Pursuing Pharmaceutical Sciences as an Undergraduate Student at Ohio State

All freshman applications are considered within a competitive admission process for the Columbus campus. The primary criteria for admission are the completion of the applicant's high school college preparatory program, performance in that program as indicated by class rank and/or grade-point average, and performance on either the ACT or SAT. Students with an ACT composite score of at least 25 (or combined SAT Critical Reading and Math scores of 1150) and who rank in the top 25% of their high school class may directly enroll in the B.S.P.S. program.

Other students wishing to major in the pharmaceutical sciences, must first apply to and be accepted to Ohio State as an undergraduate student. Upon successful completion of the prerequisite courses, a student may then request a transfer to the College of Pharmacy.

Pharmaceutical Sciences Prerequisites

Students may request a transfer into this major once the following prerequisites are met:

- Biology 113 and 114
- Chemistry 121-123
- Mathematics 150-152
- A minimum of 45 credit hours
- Cumulative GPA of at least 2.7*
- Completion of all university admissions conditions

*subject to change

Pharmaceutical Sciences Requirements

Pharmaceutical sciences courses in the B.S.P.S. curriculum will include biopharmacy, medicinal chemistry and pharmacognosy, pharmaceutical administration, pharmaceuticals, and pharmacology. Students must also take course work in organic and general chemistry, biology, physics, physiology, and calculus, as well as electives within an area of specialization. Various courses incorporate lecture/recitation sections and laboratory experiences. B.S.P.S. students must also complete course work in a foreign language and satisfy the university's General Education Curriculum.

Co-Curricular Opportunities

Ohio State offers many opportunities for students to learn and grow outside of the classroom. These range from cooperative education (co-op) and internships to study abroad programs to student organizations. Co-ops and internships place students in professional environments while they are Ohio State students. Ohio State offers more than 100 study abroad programs in 40 countries around the world. In addition, there are hundreds of student organizations on campus to meet the interests of a diverse student population.

These experiences enable students to gain valuable work experience, learn about cultures, and take on leadership roles before they enter the workforce. All of these experiences enhance learning and may provide an advantage in the job market.

Honors & Scholars Programs

The College of Pharmacy provides opportunities for students to participate in the Honors Program, various Scholars Programs (through University Honors and Scholars) and the Early Admission Pathway (EAP) for the Doctor of Pharmacy Program. All of these students have the opportunity to live in Pharmacy House, a living-learning community for students of all majors with an interest in Pharmacy.

The EAP provides advanced admission to the College of Pharmacy's Doctor of Pharmacy (Pharm.D.) program for a select group of Honors freshman entering Ohio State. The pathway is intended to guarantee talented high school students the opportunity to enter the College of Pharmacy's Doctor of Pharmacy Program after the completion of pharmacy program prerequisites and a bachelor's degree with honors, while actively participating in EAP activities. To be eligible for admission to the College of Pharmacy's Early Admission Pathway, students must meet the following requirements:

- Be current high school seniors
- Be admitted to Ohio State's Columbus campus for autumn quarter

For more information, check these web sites:

College of Pharmacy: www.pharmacy.ohio-state.edu

Ohio State: osu.edu

Admissions: undergrad.osu.edu

Multicultural Center: multiculturalcenter.osu.edu

First Year Experience Program: fye.osu.edu

Curriculum Sample

This is a sample list of classes a student will take to pursue a degree in pharmaceutical science. Since university students need more than specific education in a narrow field, they also will take classes to complete the General Education Curriculum (GEC). The GEC will allow students to develop the fundamental skills essential to collegiate success across major programs. Course work options satisfying the GEC often come from a variety of academic areas of study allowing students to tailor their GEC toward their interests. Note: This sample represents one of several possible paths to a degree in pharmaceutical science. Consult the college web site, www.pharmacy.ohio-state.edu, for further details.

First Year:

Pharmacy Survey	1
Chemistry	15
Foreign language	10
English Composition	5
Math	15
Total	46

Second Year:

Biology	10
Organic Chemistry	9
Organic Chemistry Lab	4/6
Foreign language	10
Physics	5
GEC	10
Electives	2
Total	50/52

Third Year:

Physics	10
Physiology	5
Biomedical Chemistry	6
Medical Chemistry	3
Pharmaceutical Distribution/ Health Care Systems	3
Pharmacology	3
GEC	5
Electives	10
Total	45

Fourth Year:

Pharmaceutics	4
Medicinal Chemistry Lab	2
Pharmaceutics Lab	2
Pharmacology Lab	2
Analytical Chemistry Lab	5*
GEC	20
Electives	14*
Total	45*

*credits split between lab and electives for Analytic Chemistry Lab are split between lab and electives.

- Submit a separate application to the College of Pharmacy
Office of Student Affairs
- Be approved for University Honors Affiliation

Pharmacy House

Pharmacy House is a living-learning community in Paterson Hall, which is a south campus residence hall. Students living in Pharmacy House have access to on-site academic advising, dinners with faculty and pharmacy-related events designed to acquaint students with the science and profession of pharmacy. Students enrolled in various majors have the opportunity to live in Pharmacy House; however, effective autumn quarter 2010, first-year Early Admissions Pathway students are required to live there. While living in Pharmacy House, students have the chance to participate in events designed to introduce them to the many opportunities in the pharmacy profession. Students will enjoy social activities in a relaxed atmosphere that allow them to interact with current pharmacy students, students in other majors with an interest in pharmacy, and faculty and staff.

Career Prospects in Pharmaceutical Sciences

Graduates of the B.S.P.S. program will be prepared for graduate education, graduate professional education, or a health-related career. The pharmaceutical industry offers career opportunities in sales and marketing, drug research and development, quality assurance, and professional services.

The B.S.P.S. is a non-licensure undergraduate major and will not qualify a graduate to become a pharmacist. It is intended as preparation for graduate studies in the pharmaceutical sciences, graduate professional studies (e.g. Doctor of Pharmacy or Doctor of Medicine), or entry-level employment in the pharmaceutical industry.

[Note: The College of Pharmacy's entry-level Doctor of Pharmacy (Pharm.D.) is a four-year graduate professional program. To matriculate into the Doctor of Pharmacy program, all students must complete a bachelor's degree. Applicants are not required to have prior pharmacy education; any undergraduate major is acceptable as long as program prerequisites are met. For more information contact the College of Pharmacy at the numbers listed below.]

More About the College of Pharmacy

The College of Pharmacy at Ohio State is a leader in both scientific and clinical education, and our faculty has been recognized by their peers at the national and international levels. The college's graduate professional program is ranked 5th in the nation by *U.S. News & World Report*. We are proud of the personal attention we provide to pharmacy students as we strive to deliver a small college feel within the setting of a major university. Our commitment to diversity is exemplified in our current enrollment of 25% minority students in the B.S.P.S. program.

Revised May 2009. For the most up-to-date information on the pharmaceutical sciences program, please visit www.pharmacy.ohio-state.edu.

Contact information:

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