PHARMACY

Pharmacists are medication experts who work directly with patients and with other health professionals to ensure the safe and efficient use of medications. Modern pharmacists have careers that range from the traditional neighborhood drugstore pharmacist to the specialist in cancer chemotherapy. There are currently 139 colleges and schools of pharmacy within the United States; see a list at: http://www.aacp.org/resources/student/Pages/SchoolLocator.aspx . Although historically these schools offered a variety of degree programs, the Doctor of Pharmacy (Pharm.D.) has become the accepted degree in pharmacy. The number of students applying to pharmacy school has dramatically increased in recent years, and this trend is likely to continue.

Typical Course Requirements for Pharmacy Schools:

English	1 year or equivalent
Calculus (1-2 semesters)	MTH 151 **or** 153, 251
Statistics (1 semester)	STA 261
Biology (1 year)	BIO/MBI 115, 116
Microbiology (1 semester)	MBI 201
Physiology (1-2 semesters)	BIO 305 plus advanced BIO classes
Human Anatomy (1 semester)	BIO 201
General Chemistry (1 year)	CHM 141, 144 and CHM 142, 145
Organic Chemistry (1 year)	CHM 241, 244 and CHM 242, 245
Biochemistry (1 semester)	CHM 432 **or** 332
Physics (1 year)	PHY 161, 162 **or** PHY 191, 192
Psychology (1 semester)	PSY 111, 112

NOTE: Many schools do not require all of these courses. Others may require or recommend additional courses or training in areas such as quantitative analysis/analytical chemistry, microeconomics, interpersonal communication, or technical writing. Because requirements are not standardized, it is very important that students research every school to which they plan to apply.

Many (but not all) schools require the PCAT exam, which is given three times each year (October, January, and April). Most students take this in April of their junior year, and they may retake the exam without penalty.

For a successful application, high overall and science GPAs are important, and only academically strong students will be accepted. Other important factors are pharmacy-related experiences, competitive PCAT scores, well-developed interpersonal skills, evidence of leadership potential, and strong letters of reference. Many schools (including Ohio State University) also require that applications be submitted through PharmCAS (a national application service).

Of the seven pharmacy schools in Ohio, the four that seem most suited for Miami students are:

The Ohio State University College of Pharmacy

This is the strongest program in Ohio and one of the best in the country. It requires a BA or BS degree before entry into the program. This program admits approximately 200 students per year. http://www.pharmacy.ohio-state.edu/

The University of Cincinnati College of Pharmacy

This program requires two years of pre-pharmacy course work; it does not require a 4-year undergraduate degree. The school typically admits 66 students per year. http://pharmacy.uc.edu/

The University of Toledo College of Pharmacy

This program is a 6-year [post high school] program with a preference for in-house students. It does admit some students from other institutions after 1-2 years of pre-pharmacy coursework; it does not require a 4-year undergraduate degree. http://www.utoledo.edu/pharmacy/index.html

Northeastern Ohio Medical University

This is a four-year program that requires at least two years of pre-pharmacy coursework; it does not require a 4-year undergraduate degree. This program is unique in that pharmacy students study with medical students in many integrated classes. Approximately 75 students are admitted into this program annually. http://www.neomed.edu/academics/pharmacy

In addition to schools in Ohio, there are a number of highly ranked Pharmacy programs in surrounding states, including The University of Kentucky, The University of Michigan, Purdue University, The University of Pittsburgh, and West Virginia University.

For additional information about pharmacy as a career and for links to other schools see: http://www.aacp.org. Advisors Dr. Michael Robinson (Biology) and Dr. Heeyoung Tai (Chemistry) can help students select classes and plan for a career in pharmacy. Also, consider joining our Pre-Pharmacy Club at (https://muhub.campuslabs.com/engage/organization/pharmacyclub).

PHARMACEUTICS

Though less well known than pharmacy, pharmaceutics may be a viable (and perhaps even a preferred) alternative for some students. Pharmaceutics is research-based, and pharmaceutical scientists are rarely directly involved with patients. Instead, they play a major role in the drug development process by investigating how drugs reach their site of action and how they can be used optimally for the benefit of the patient. This is typically a five-year Ph.D. program; however, at some schools, e.g. Ohio State University, students accepted into the pharmaceutics program receive a full waiver of tuition and fees plus a stipend to cover living expenses.

The program of study suggested above for pre-Pharmacy would be generally appropriate for pre-Pharmaceutics; however, it is important to directly contact the school(s) of interest for specifics. The GRE (a general skills test) is typically required, rather than the PCAT. The program at Ohio State University (based in the Division of Pharmaceutics within the College of Pharmacy) is arguably the best choice for most interested Miami students. A degree in pharmaceutics and drug design is also available from The University of Toledo.