



# Pre-Pharmacy

Pharmacists are health care professionals that serve the pharmaceutical needs of patients and their community. Pharmacists prepare, compound, and dispense medicines prescribed by doctors, veterinarians, and dentists. Additionally, pharmacists learn to recognize and classify hundreds of medicines. They advise doctors, veterinarians, and other prescribers on the proper selection and effect of drugs, and provide education to patients regarding drug use and interactions. Pharmacists are vital to the health care process and assist with interventions that may cure disease, eliminate or reduce symptoms, arrest or slow a disease process, prevent of disease, diagnose disease, and desired alterations in physiological processes, all with minimum risk to patients. As a result of society's changing health and social issues, Pharmacists today do much more than simply compound and dispense medication. Their roles have broadened to include direct patient care, education, and case management duties.

Pharmacists must graduate from a program accredited by the American Council of Pharmaceutical Education. Most schools require a pre-pharmacy curriculum emphasizing mathematics and basic sciences, such as chemistry, biology, and physics. Pharmacists must also be licensed, which requires graduation from a college of pharmacy. Once admitted to pharmacy school, students generally complete four years of academic and clinical coursework to earn a Doctor of Pharmacy (PharmD) degree. Some schools of pharmacy offer compressed calendars, which allow students to finish in three years by attending school year-round.

Practicing pharmacists have earned a degree in pharmacy, completed an internship, and have passed the pharmacist licensing exams. Current requirements for California pharmacist licensure are available from the Board of Pharmacy web site. *A degree in pharmaceutical science or related field will not prepare you or permit you to practice pharmacy in the U.S.* It may provide the necessary prerequisites to enter a pharmacy school. Please check with your counselor for additional information.

## Taking the Right Classes

Preparing to apply to pharmacy school is somewhat similar to preparing for medical school. A baccalaureate degree not required by all campuses, however, few candidates are admitted without having one conferred. Most California schools require a bachelor's degree for admission.

### Pre-Pharmacy Course Requirements for Most Schools

1 year of English	ENGL G100 + 110
1 year of chemistry (with laboratory)	CHEM G180 + G185
1 year of organic chemistry (with laboratory)	CHEM G220 + G225
1 year of biology (with laboratory)	BIOL G180 + G182
1 year of physics (with laboratory)	PHYS G120 + G125 or PHYS G185 + G280
1 semester of human anatomy	BIOL G220 <sup>1</sup>
1 semester of human physiology	BIOL G225
1 semester of microbiology (with laboratory)	BIOL G210
1 semester of Psychology or Sociology	PSYC G100 (or G100H) or SOC G100
1 semester of economics	ECON G170 or G175 <sup>3</sup>
1 semester of communications	COMM G110
1 semester of calculus	MATH G180 <sup>2</sup> (+ MATH G185)
1 semester of statistics	MATH G160 <sup>2</sup>
1 quarter/semester of biochemistry	Upper Division Course: Taken at University
1 quarter/semester of molecular biology	Upper Division Course: Taken at University
Computer Competency	CS G130

<sup>1</sup>Required for American University of Health Science, Western University of Health Sciences and Loma Linda University PharmD program

<sup>2</sup>Some colleges require one or more calculus level mathematics, and one course in statistics. Please see a GWC counselor for details.

<sup>3</sup>Course requirement varies. USC requires ECON G170.

Note that some schools disallow AP/IB/CLEP credit for prerequisite coursework, or require a minimum score for credit.

## Choosing the Best Major

What is the best major for pre-pharmacy students? The answer is: there is no best major. Choose a major that you find most interesting, challenging and satisfying. You should study subjects that you really enjoy, and avoid choosing a major because it might "look good" on your application. No points are given for the major that you choose, however, you will probably perform better in a major that captures your interests. Many students choose to major in the physical sciences, such as chemistry or biochemistry, because the requirements for those degrees are very similar to pharmacy school admission requirements. If you decide to pursue a non-science major, then your strong performance in the pre-pharmacy requirements will be crucial.

### Important for Community College Students:

If you complete all of your pre-pharmacy requirements at community college, it will be in your best interest to take several upper-division science classes at the four-year institution to which you transfer. Performing well in upper-division science courses further demonstrates your ability to handle the rigorous science-based coursework found in pharmacy school. If you are not a science major, it may still be important for you to take additional science courses beyond the minimum requirements to further support application to pharmacy school.

### PCAT Preparation

The Pharmacy College Admission Test (PCAT) is prepared and administered by the Pharmacy Admission Testing Program at the direction of the American Association of Colleges of Pharmacy. The PCAT is now available only online. Please visit <http://www.pcatweb.info/> for more information. The Pharmacy College Admissions Test (PCAT) is required by approximately 2/3 of all pharmacy schools; however, some California schools do not require this test as part of the admissions requirements.

### Pharmacy School Application Process

1. Meet minimum Requirements: 60 transferable college units minimum, however a Bachelor's degree for is highly desired. (*Most campuses require a Bachelor's degree for admission*), Pre-requisite coursework, coursework, PCAT scores if required.
2. Apply to universities. Those candidates deemed competitive are asked to complete a supplemental application with additional information and documentation. Includes answering essay questions, providing letters of recommendation, resume, etc.
3. Be invited to interview with selected university committees
4. Get a letter of "Acceptance", "Denial", or "Waitlist"
5. Matriculate to the university of choice where final acceptance was granted.

**Pharmacy Schools:** There are over 129 Accredited Pharmacy schools in the U.S.

There are 16 Pharmacy Schools in California (<https://www.acpe-accredit.org/accredited-programs-by-state/>)

Campus	Website	GPA	BCPM GPA
American University of Health Sciences <sup>1</sup>	<a href="http://www.auhs.edu/academics/pharmacy/doctor-of-pharmacy/">http://www.auhs.edu/academics/pharmacy/doctor-of-pharmacy/</a>	2.5+ <sup>2</sup>	2.5+ <sup>2</sup>
California Northstate University <sup>1</sup>	<a href="https://pharmacy.cnsu.edu/">https://pharmacy.cnsu.edu/</a>	2.5+ <sup>2</sup>	2.5+ <sup>2</sup>
Chapman University <sup>1</sup>	<a href="https://www.chapman.edu/pharmacy/academic-programs/pharmd/index.aspx">https://www.chapman.edu/pharmacy/academic-programs/pharmd/index.aspx</a>	3.0+ <sup>2</sup>	3.0+ <sup>2</sup>
Keck Graduate Institute	<a href="https://www.kgi.edu/academics/degrees-certificates/doctor-of-pharmacy/">https://www.kgi.edu/academics/degrees-certificates/doctor-of-pharmacy/</a>	--	--
Loma Linda University <sup>1</sup>	<a href="https://pharmacy.llu.edu/">https://pharmacy.llu.edu/</a>	2.75+ <sup>2</sup>	2.75+ <sup>2</sup>
Marshall Ketchum University	<a href="http://www.ketchum.edu/college-pharmacy">http://www.ketchum.edu/college-pharmacy</a>	3.0+ <sup>2</sup>	3.0+ <sup>2</sup>
Touro University <sup>1</sup>	<a href="https://admissions.tu.edu/cop/">https://admissions.tu.edu/cop/</a>	3.28	3.18
UC Irvine <sup>2</sup>	<a href="https://pharmsci.uci.edu/pharm-d/">https://pharmsci.uci.edu/pharm-d/</a>	3.0+ <sup>2</sup>	3.0+ <sup>2</sup>
UC San Diego	<a href="https://pharmacy.ucsd.edu/">https://pharmacy.ucsd.edu/</a>	2.8+ <sup>2</sup>	3.0+ <sup>2</sup>
UC San Francisco	<a href="https://pharmd.ucsf.edu/">https://pharmd.ucsf.edu/</a>	3.53	3.44
University of the Pacific <sup>1</sup>	<a href="https://pharmacy.pacific.edu/pharmacy">https://pharmacy.pacific.edu/pharmacy</a>	3.3	3.3
West Coast University	<a href="https://westcoastuniversity.edu/programs/pharmd">https://westcoastuniversity.edu/programs/pharmd</a>	--	--
Western University of Health Science	<a href="https://prospective.westernu.edu/pharmacy/pharmd/apply/">https://prospective.westernu.edu/pharmacy/pharmd/apply/</a>	3.20	3.07

**Degrees Offered:** Doctor of Pharmacy (Pharm.D.)

The Pharm.D. is a four-year program that produces a scientifically and technically competent pharmacist that can use their knowledge to provide maximum health care services to patients. Pharmacy students gain experience in patient-centered learning experiences and in working in close, cooperative relationships with health practitioners.

### PRE-PHARMACY PREPARATION

**Dual Degrees:** Some campuses will offer joint degrees along with the PharmD, including a research Ph.D.; Masters in Public Health (MPH)

**Minimum GPA** required for applying is 2.70 for those accepting candidates without a bachelor's degree; 3.00 for all others.

**GPA Range** for admission to Pharmacy Schools: 3.1 – 3.7

**Residency Status:** US citizen or permanent resident (permanent residents must be in possession of their resident alien card at time of application)

**Median Income:** \$121,500

### Additional Resources:

American Association of Colleges of Pharmacy: (<http://www.aacp.org/resources/student/Pages/default.aspx>) Accreditation

Counsel for Pharmacy Education: ([https://www.acpe-accredit.org/shared\\_info/programsSecure.asp](https://www.acpe-accredit.org/shared_info/programsSecure.asp))