

PRE-PHARMACY

Following very rapid growth between 2010 and 2020, job openings for pharmacists are expected to increase by around 3% from 2021 through 2031, on par with other occupations. Entry level salaries average around \$125,000 depending on the area of the country and the type of setting (e.g. chain pharmacy, hospital, clinic, research facility, etc.).

The path to becoming a pharmacist begins with undergraduate study of biology and chemistry. Many students will complete a full bachelor of science degree typically in biology, chemistry or biochemistry and then move on to the Doctor of Pharmacy degree (PharmD), the professional graduate degree needed to enter the profession. Some students will be accepted to a PharmD program early prior to finishing college and will proceed to that program before finishing the bachelor's degree. Students should talk with their advisor about the pros and cons of different timelines and discuss which option is best for their own situation.

The PharmD portion of the program is four years so it takes between 6 and 9 years total of schooling to become a pharmacist. Entrance to pharmacy school is competitive - grades in science and math classes during college are an important factor and some pharmacy schools require a standardized admissions test (PCAT) with strong scores. Experience during college also matters. Strong applicants will have worked, volunteered, or interned in a pharmaceutical setting during college.

UWM offers all of the prerequisite coursework necessary for students to apply to professional pharmacy schools, the "pre-pharmacy" part of student's education. But UWM does not have a PharmD program and students will have to attend another university for that portion of their education.

We also have dual admission and early admission partnerships with four Pharm.D. schools: Midwestern University College of Pharmacy, University of Wisconsin-Madison, Concordia University Wisconsin, and the Medical College of Wisconsin.

1. The Midwestern University program offers two options. Track 1 offers dual admission to UWM's pre-pharmacy program and Midwestern University's Pharm.D. program while still a high school senior. In this program, a student would complete two years of science coursework at UWM before completing three and a half years at Midwestern. Application occurs during senior year in high school. Track 2 offers early admission to UWM freshmen on a pre-pharmacy track. Students have up to three years total (counting the freshman year at UWM) to complete the pre-pharmacy coursework at UWM which is followed by three years at Midwestern. Application occurs immediately at the end of freshman year at UWM. Read more about the dual acceptance program with Midwestern University (<https://www.midwestern.edu/academics/degrees-programs/doctor-pharmacy-program/college-pharmacy-downers-grove/dual-acceptance-program-il/>).
2. The University of Wisconsin-Madison's Early Assurance program is available to high school seniors and at all UW campuses that offer the bachelor's degree including UWM. College freshmen at UWM must apply no later than the end of their first semester of freshman year. Students who are accepted to the program can transition to Madison's pharmacy program as soon as all prerequisites are completed whether the bachelor's degree is completed or not. More information about the program, including the application steps, is available at PharmD Early Assurance (EA) Program – School of Pharmacy (wisc.edu)

(https://pharmacy.wisc.edu/academics/pharmd/early-assurance/?utm_campaign=Early%20Assurance%20-%20Fall%202024&utm_medium=email&_hsmi=262411440&hsenc=p2ANqtz-wk3g76XkGAYBkyx5ed9FbAdsB4o1YTV34BWfcC7i6-JO-ht7ZOQppAV4ex_Zbw2Lh3lxoeSm6il60JjMw1EKf9nyYg&utm_content=262395)

3. The 3+4 Accelerated Program with Concordia University allows students who meet the program's requirements to spend three years at UWM and four years at Concordia in their PharmD program and still earn a bachelor's degree. Some Concordia credits will transfer back to UWM and count towards a bachelor's degree in biology from biology. Speak with the pre-pharmacy advisor during the first semester of freshman year to review the specific academic milestones that must be met to join the program.
4. The Early Assurance Direct Admission program with the Medical College of Wisconsin accepts applications from UWM freshmen and sophomores. The deadline to apply is the end of January of a student's sophomore year. Students accepted to the program must complete three years (90 credits) at UWM with a minimum 3.0 cumulative GPA and then will enter the PharmD program at the Medical College of Wisconsin (MCW). Some MCW credits will transfer back to UWM to count for a bachelor's degree in biology, microbiology, or biochemistry. Interested students should speak with the pre-pharmacy advisor during their freshman year to review the specific academic milestones that must be met and to determine which undergraduate major is best for them.

All students who indicate an interest in pre-pharmacy on their application for admission will be assigned to a pre-pharmacy advisor. We recommend students begin meeting with this advisor as soon as freshman year in order to plan all needed activities into your college career.

Requirements

Entrance to pharmacy school is very competitive and requires strong grades and satisfactory scores on the Pharmacy College Admission Test (PCAT). Due to the variance in admission requirements, it is very important that students consult with the pre-pharmacy advisor every semester.

Although specific admission requirements may vary among schools, below are some common course requirements among many pharmacy schools:

Code	Title	Credits
BIO SCI 150 & BIO SCI 152	Foundations of Biological Sciences I and Foundations of Biological Sciences II	8
CHEM 102 & CHEM 104	General Chemistry and General Chemistry and Qualitative Analysis	10
CHEM 343	Organic Chemistry	3
CHEM 344	Organic Chemistry Laboratory	2
CHEM 345	Organic Chemistry	3
Select one of the following sequences:		5
PHYSICS 120 & PHYSICS 121	General Physics I (Non-Calculus Treatment) and General Physics Laboratory I (Non-Calculus Treatment)	
PHYSICS 209 & PHYSICS 214	Physics I (Calculus Treatment) and Lab Physics I (Calculus Treatment)	

Select one of the following: 4-5

MATH 231	Calculus and Analytic Geometry I
MATH 221	Honors Calculus I
MATH 211	Survey in Calculus and Analytic Geometry I ¹

Other common course requirements include (but are not limited to) the following:

Code	Title	Credits
ENGLISH 101 & ENGLISH 102	Introduction to College Writing and College Writing and Research	6
BIO SCI 202 & BIO SCI 203	Anatomy and Physiology I and Anatomy and Physiology II	8
BIO SCI 101 or BIO SCI 383	General Survey of Microbiology ² General Microbiology	4
CHEM 501	Introduction to Biochemistry	3
MTHSTAT 215 or BIO SCI 465	Elementary Statistical Analysis Biostatistics	3
Coursework in social sciences:		
ECON 103 or ECON 104	Principles of Microeconomics Principles of Macroeconomics	3
PSYCH 101	Introduction to Psychology	3
Additional coursework in the social sciences		
Coursework in humanities (e.g., history, philosophy)		
Coursework in communication:		
COMMUN 101	Introduction to Interpersonal Communication	3
COMMUN 103	Public Speaking	3
Coursework designated as satisfying the cultural diversity requirement		

¹ Not every pharmacy school will accept MATH 211.

² Or both BIO SCI 101 and BIO SCI 383 for 8 credits.

Concordia University Wisconsin, School of Pharmacy track

The curriculum below is specified for UW-Milwaukee students planning to complete the **3+4 program** leading to a Biological Sciences BS from UWM and a Doctor of Pharmacy from Concordia University Wisconsin (CUW). Students must successfully complete at least 90 credits at UW-Milwaukee, including UWM General Education Requirements (GER) and L&S degree requirements as specified in the UW-Milwaukee Catalog at the time of admission. See your L&S advisor for full information on the 3+4 program, including other conditions to enter the 3+4 program and which CUW Pharmacy courses transfer back to UWM.

Students must have a C or better in all pre-pharmacy coursework and maintain at least a 2.5 GPA in all courses counting toward the Biological Sciences BS at both UWM and CUW.

The following UWM courses must be completed by the time a UWM student starts classes at CUW School of Pharmacy:

Code	Title	Credits
<i>Science core/foundational courses</i>		
BIO SCI 150	Foundations of Biological Sciences I	4
BIO SCI 152	Foundations of Biological Sciences II	4

CHEM 102	General Chemistry	5
CHEM 104	General Chemistry and Qualitative Analysis	5
CHEM 343	Organic Chemistry	3
CHEM 344	Organic Chemistry Laboratory	2
CHEM 345	Organic Chemistry	3
PHYSICS 120	General Physics I (Non-Calculus Treatment)	4
Select one or more advanced science electives if needed to reach 32 credits of core sciences:		2-4
BIO SCI 315	Cell Biology	
BIO SCI 325	Genetics	
<i>Support courses</i>		
ENGLISH 102	College Writing and Research	3
COMMUN 101	Introduction to Interpersonal Communication	3
COMMUN 103	Public Speaking	3
ECON 103	Principles of Microeconomics	3
ECON 104	Principles of Macroeconomics	3
MATH 211	Survey in Calculus and Analytic Geometry I	4
MATH 213	Calculus with Life Sciences Applications	4
MATH 231	Calculus and Analytic Geometry I	4
MTHSTAT 215	Elementary Statistical Analysis	3
BIO SCI 465	Biostatistics	3
Additional courses to meet UWM GER and L&S requirements		25
Total Credits		90-92

Medical College of Wisconsin, School of Pharmacy track

The curriculum below is specified for UW-Milwaukee (UWM) students planning to complete the **early assurance direct admission program** leading to a Biological Sciences BS or Microbiology BS from UWM and entry to the Doctor of Pharmacy program at Medical College of Wisconsin (MCW). Students must successfully complete at least 90 credits at UW-Milwaukee, including UWM General Education Requirements (GER) and L&S degree requirements as specified in the UW-Milwaukee Catalog at the time of admission. See your L&S advisor for full information on the early assurance direct admission program, including other conditions to enter the program and which MCW Pharmacy courses transfer back to UWM.

The following UWM courses are required for admission to the MCW School of Pharmacy:

Code	Title	Credits
BIO SCI 150	Foundations of Biological Sciences I	4
BIO SCI 152	Foundations of Biological Sciences II	4
BIO SCI 325	Genetics	4
BIO SCI 383	General Microbiology	4
CHEM 102	General Chemistry	5
CHEM 104	General Chemistry and Qualitative Analysis	5
CHEM 343	Organic Chemistry	3
CHEM 344	Organic Chemistry Laboratory	2
CHEM 345	Organic Chemistry	3

COMMUN 101	Introduction to Interpersonal Communication	3
ENGLISH 101	Introduction to College Writing	3
ENGLISH 102	College Writing and Research	3
MATH 211	Survey in Calculus and Analytic Geometry I	4
MTHSTAT 215	Elementary Statistical Analysis	3