PHARMACEUTICAL SCIENCES, BS

The BS in Pharmaceutical Sciences **is not a major**, but is a milestone degree granted to current Doctor of Pharmacy (PharmD) students while working toward the PharmD degree. In order to qualify for the BS in Pharmaceutical Sciences, students must have attended UW–Madison prior to entering the School of Pharmacy, and must meet all degree requirements. More detailed information about this degree may be found on the school website (https://pharmacy.wisc.edu/programs/pharmd/curriculum/bs-ps/).

Information about our Doctor of Pharmacy program (PharmD) can be found at https://pharmacy.wisc.edu/programs/pharmd/. The PharmD is required to be eligible to take the North American Pharmacist Licensure Examination (NAPLEX) and be registered and licensed as a pharmacist.

Students interested in pursuing an **undergraduate** degree offered by the School of Pharmacy may want to investigate the BS Pharmacology and Toxicology (http://guide.wisc.edu/undergraduate/pharmacy/pharmacy/pharmacology-toxicology-bs/) program. This interdisciplinary major in the biomedical sciences can serve as a foundation for further education in graduate or professional degree programs, or for entry-level scientific employment.

HOW TO GET IN

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The BS in Pharmaceutical Sciences is a non-admitting milestone degree. Students earn this credential once degree requirements have been met while working toward their Doctor of Pharmacy (PharmD) degree. For more information on how to apply, see the Doctor of Pharmacy Program's Admissions (https://pharmacy.wisc.edu/academics/pharmd/admissions/).

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (http://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext) section of the *Guide*.

General Education

- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Breadth—Social Studies: 3 credits
- Communication Part A Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

MAJOR REQUIREMENTS

The bachelor's degree will be awarded once all Pharmaceutical Sciences major requirements are met, as well as the university general education requirements and other coursework totaling at least 120 credits.

Code	Title	Credits
PHM SCI 420	Physicochemical Principles of Drug Formulation and Delivery	3
PHM SCI 432	Pharmaceutical Biochemistry	4
PHARMACY 423	Pharmacy Integrated Learning Laboratory	1
PHM PRAC 438	Nonprescription Medications and Self-Care	2
PHM PRAC 461	Pathways in Pharmacy Practice	1
PHM PRAC 650	Comprehensive Immunization Delivery	1
S&A PHM 411	Pharmacy in the Health Care System	3
PHM SCI 531	Medicinal Chemistry I	3
PHM SCI 541	Pharmaceutical Calculations, Dispensing and Compounding	3
PHARMACY 434	Pharmaceutical Genetics and Immunology	2
PHARMACY 621	Pharmacokinetics	3
PHM PRAC 426	Pharmacy Practice Experience I	1
PHM PRAC 462	Professional Development and Engagement I- Developing Your Professional Identity	1
S&A PHM 414	Social and Behavioral Aspects of Pharmacy Practice	3
Total Credits		**31**

ADDITIONAL NOTES

- World language coursework can count towards the "Humanities/Literature/Arts" gen ed requirement.
- AP, IB, retro-credits, and credit-granting transfer coursework from other institutions (including coursework completed while in high school) all count toward the elective credit requirement.
- Students must also complete coursework appropriate for admissions to the PharmD program.

- Students earning the BS Pharmaceutical Sciences degree will NOT be able to earn additional majors or undergraduate certificates.

QUALITY OF WORK

- Students must have a minimum 2.000 cumulative grade point average.
- School of Pharmacy academic policies (regarding matters such as academic and professional conduct, academic progress/probation, honor roll, pass/fail registration, and independent study coursework) are found in the PharmD student policy handbook (https://students.pharmacy.wisc.edu/pharmd-handbook/).

UNIVERSITY DEGREE REQUIREMENTS

Total Degree	To receive a bachelor's degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.
Residency	Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. “In residence” credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.
Quality of Work	Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

LEARNING OUTCOMES

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1. Drug properties: Apply knowledge of the physical, chemical, and pharmacologic, and formulation properties of drugs and influence on drug parameters (such as pharmacology, pharmacodynamics, stability, drug/dose delivery design). Differentiate among the therapeutic classes based on mechanisms of action, clinical use, adverse effects, contraindications, interactions, and dosage forms and regimens.
2. Patient-centered care: Use the pharmacist patient care process (PPCP) to employ personalized medicine and social, behavioral and other evidence-based principles to design and deliver individualized patient-care plans that optimize safety, efficacy, and medication used to improve therapeutic outcomes.
3. Drug kinetics: Design or modify treatment regimens including dose, schedule, and duration using patient-specific or population pharmacokinetic data, plasma concentration-time profile of drugs, and factors that alter them.
4. Pharmaceutical calculations and product processing: Ensure accurate and safe sterile and non-sterile compounding, calculation, labeling, and dispensing of medications.
5. Health equity and inclusion: Identify root causes of health disparities and incorporate principles of cultural and structural humility to promote access, inclusion, and equitable health outcomes.