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## Catalog

**2025-2026**

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This catalog is published for the convenience of students at Notre Dame of Maryland University School of Pharmacy. It is effective June 1, 2025. The School reserves the right to make changes in any or all specifications contained herein and to apply such revision(s) to registered and accepted students as well as new admissions. No contractual rights between Notre Dame of Maryland University School of Pharmacy and any student are intended and none may be deemed to be created by issuance of this catalog.

All references to the dean, associate dean, and assistant dean are individuals in the School of Pharmacy. University administration will be noted as such.

### **ACCREDITATION**

Notre Dame of Maryland University is accredited by the Middle States Association of Universities and Secondary Schools and by the Maryland State Department of Education.

The School of Pharmacy is accredited by the Accreditation Council for Pharmacy Education.

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## Academic Calendar

### Summer 2025

|                                                |               |                           |
|------------------------------------------------|---------------|---------------------------|
| Advanced Practice Experiences Preparation (P4) | Monday–Friday | June 9–13                 |
| Pre-APPE Preparation Assessment (P4)           | Wednesday     | June 10                   |
| Pinning Ceremony (P4)                          | Thursday      | June 12                   |
| Advanced Pharmacy Practice Experiences (P4)    | Monday–Friday | June 16–July 25 (6 weeks) |

### Fall 2025

|                                                          |                             |                     |
|----------------------------------------------------------|-----------------------------|---------------------|
| Advanced Pharmacy Practice Experiences (P4)              | Monday–Friday               | July 28–December 12 |
| SOP New Student Orientation (P1)                         | Tuesday–Thursday            | August 5–7          |
| First day of didactic classes for P1                     | Monday                      | August 11           |
| First day of didactic classes for P2 & P3                | Monday                      | August 18           |
| SOP Drop/Add period                                      | Monday–Friday               | August 18–29        |
| Labor Day – No classes and no APPEs                      | Monday                      | September 1         |
| Schedule change for Holiday – Follow Monday Schedule     | Friday                      | September 5         |
| P1 Success Week (P1)                                     | Monday–Friday               | September 15 – 19   |
| Interprofessional Education #1 (P1)                      | Tuesday & Thursday evenings | September 16 & 18   |
| P1 White Coat Ceremony                                   | Saturday                    | September 27        |
| Last day to withdraw from classes                        | Friday                      | October 10          |
| CareerRxpo                                               | Saturday                    | October 11          |
| Community Day (required activities P1-P3; P2s visit JHH) | Tuesday                     | October 14          |
| Registration for Spring 2026                             | Monday–Friday               | October 27–31       |
| Interprofessional Education #3 (P2)                      | Monday                      | October 27          |
| Schedule change for Holiday – Follow Friday Schedule     | Monday                      | November 24         |
| Thanksgiving break (P1/P2/P3)                            | Wednesday–Friday            | November 26–28      |
| Thanksgiving break for P4                                | Thursday & Friday           | November 27 & 28    |
| Last day of semester classes                             | Friday                      | December 5          |
| Reading Day                                              | Monday                      | December 8          |
| Final exams                                              | Tuesday–Saturday            | December 9–13       |
| Remediation                                              | Monday–Friday               | December 15–19      |

### Spring 2026

|                                                      |                    |                          |
|------------------------------------------------------|--------------------|--------------------------|
| First day of didactic classes (P1, P2, P3)           | Monday             | January 5                |
| SOP Drop/Add period                                  | Friday–Thursday    | January 5–22             |
| Advanced Pharmacy Practice Experiences (P4)          | Monday–Friday      | January 12–March 20      |
| MLK Birthday—No classes and no APPEs                 | Monday             | January 19               |
| Schedule change for Holiday – Follow Monday Schedule | Friday             | January 23               |
| Interprofessional Education #4 (P2)                  | Tuesday            | February 24              |
| Interprofessional Education #2 (P1)                  | Thursday           | March 5                  |
| Last day to withdraw from classes                    | Thursday           | March 5                  |
| Spring Break for didactic classes (P1-P3 only)       | Monday–Friday      | March 9–13               |
| Registration for Summer/Fall 2026                    | Tuesday–Friday     | March 24–27              |
| Easter Holiday                                       | Friday–Monday      | April 3–April 6          |
| Schedule change for Holiday – Follow Friday Schedule | Wednesday          | April 8                  |
| Schedule change – Follow Wednesday Schedule          | Tuesday            | April 28                 |
| Last day of didactic classes                         | Tuesday            | April 28                 |
| Reading Day (P1/P2/P3)                               | Wednesday          | April 29                 |
| Final exams (P1/P2/P3)                               | Thursday–Wednesday | April 30 – May 6         |
| P4 Assessments/Reviews/Activities/Remediation        | Monday –Thursday   | May 4 – 14               |
| Remediation (P1/P2/P3)                               | Wednesday–Thursday | May 7 – May 13           |
| Pre-IPPE Preparation Assessment I (P1)               | Monday             | May 11                   |
| Pre-IPPE Preparation Assessment II (P2)              | Tuesday            | May 12                   |
| Pre-APPE Preparation Assessment (P3)                 | Thursday           | May 14                   |
| Introductory Practice Experiences Orientation (P2)   | Friday             | May 15                   |
| Graduation Awards Banquet (P4)                       | Friday             | May 15                   |
| Introductory Pharmacy Practice Experiences (P2)      | Monday–Friday      | May 18–June 12 (4 weeks) |
| University Commencement                              | Tuesday            | May 19                   |
| Memorial Day – no IPPEs or APPEs                     | Monday             | May 25                   |



## **The University**

The 2011-12 academic year marked a historic transition for Notre Dame of Maryland. On September 9, 2011 – the 116th anniversary of the institution’s first day of class in 1895—the College became Notre Dame of Maryland University. In making this transition, Notre Dame continues to honor the proud traditions of its past. A Catholic liberal arts university, Notre Dame is grounded in a deep sense of history and distinction as the first Catholic women’s college in the country to award the four-year baccalaureate degree. Today, Notre Dame of Maryland University enthusiastically embraces a path forward in leadership in liberal arts, health sciences, and education. Notre Dame’s programs reflect its place in history as an institution that anticipates and meets contemporary needs with a visionary and pragmatic education.

Notre Dame students enjoy the University’s beautiful 58-acre landscaped and wooded campus, scenically located in a residential part of Baltimore’s North Charles Street corridor. From the campus, students can easily access resources throughout the city, including a number of neighboring colleges and universities. Notre Dame offers courses at convenient locations throughout Maryland and even brings its programs into workplaces.

As the University offers its students solutions to meet their needs in a modern world, the University embraces the pioneering spirit of its founders, the School Sisters of Notre Dame. A commitment to academic excellence remains the foundation of the institution. At Notre Dame, scholarship and faith are partners. The University enthusiastically welcomes students, faculty, and staff of all faith traditions. Campus-wide programs encourage students to explore, understand, and express their personal beliefs and values and to respect those of others.



## **School of Pharmacy**

With greater numbers of America's population aging, and growing advances in medicine creating more pharmaceutical products, our country has critical shortage in an area of health care delivery—qualified pharmacists.

Though pharmacists are seriously needed by community pharmacies, medical centers and other health care facilities to meet today's rising consumer demand, our nation's educational institutions could not keep pace. In 2006, with five to ten qualified applicants for every one opening in U.S. pharmacy schools, the need for a new professional school was clear. In response, Notre Dame launched a bold new initiative in fall 2008—the School of Pharmacy. Adding to the University's history of firsts, the new School of Pharmacy is the first of its kind created by a women's college in the U.S. In addition, it is Notre Dame's first professional degree program. More importantly, the School reflects Notre Dame's commitment to service to the world by solving social challenges through innovative educational efforts.

The School of Pharmacy is comprised of three academic units – department of clinical and administrative sciences, department of pharmaceutical sciences and office of experiential education. The department of clinical and administrative sciences is comprised of two types of faculty – those who are advanced pharmacy practitioners and those whose expertise include health care policy and advocacy, pharmacy practice management, public health and other relevant social and administrative sciences. The department of pharmaceutical sciences is comprised of faculty with expertise in pharmacology, medicinal chemistry, pharmaceuticals and the biological sciences. The office of experiential education is responsible for the overall operation of introductory and advanced pharmacy practice experiences which spans over the entire curriculum.

## **Vision**

To provide exceptional pharmacy education by creating a model learning community dedicated to the transformation of societal health.

## **Mission**

We educate and develop the next generation of pharmacists to be compassionate, ethical healthcare professionals who provide quality and equitable healthcare to diverse populations. We foster leadership, a culture of inclusivity, and a commitment to lifelong learning.

## **Pillars of Excellence**

The faculty, staff, and student pharmacists pledge to work together to achieve our vision and mission by embracing the Pillars of Excellence:

### **Personal Growth & Self-Awareness**

- Be accountable and responsible
- Be humble, open-minded, and adaptable
- Be aware of your mental health and well-being
- Know your limitations, be open to feedback, and learn from mistakes

### **Professionalism & Integrity**

- Be punctual
- Be honest
- Honor and follow through on commitments
- Advocate for the profession

### **Collaboration & Teamwork**

- Be a team player
- Seek opportunities to collaborate
- Celebrate success
- Commit to know colleagues outside of work

### **Communication & Interpersonal Skills**

- Be a good listener
- Be kind and caring
- Respect others' viewpoints and differences
- Be generous in the interpretation of communication

### **Curiosity & Innovation**

- Stay informed and be a lifelong learner
- Pay attention to details
- Take initiative and be creative
- Be curious not judgmental



### **Accreditation Disclosure Statement**

Notre Dame of Maryland University School of Pharmacy's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60503, 312/664-3575; FAX 312/664-4652, web site [www.acpe-accredit.org](http://www.acpe-accredit.org).

### **Complaints or Comments Regarding Program Compliance**

The accreditation standards are located on ACPE Web site ([www.acpe-accredit.org](http://www.acpe-accredit.org)). Comments or complaints regarding program compliance with the accreditation standards should be submitted to the office of the dean in writing. Complaints will be reviewed on a timely basis, and a response or plan of resolution will be communicated to individuals interested in the issue. Programmatic comments and complaints are kept on file in the office of dean and are available for review by ACPE.

ACPE has an obligation to assure that any program that seeks or holds an accreditation status remains compliant with the standards and conducts its affairs with impartiality, non-discrimination, honesty, and frankness. Any complaints from institutions, students, faculty, or the public against an accredited pharmacy program or institution housing an accredited pharmacy program must be based upon the fact that such program or institution is not in compliance with a standard or standards as established, from time to time, by ACPE.

Any complaint must be submitted to ACPE within one hundred and eighty (180) days from the date the complainant knew or should have known of the occurrence of facts on which the complaint arose. Any complaint not filed with ACPE within the time limitations set forth above shall not be considered by ACPE, except when: 1) the Executive Director determines the matter's seriousness warrants investigation to ensure continued compliance with one or more accreditation standards; or 2) any complaint held in abeyance by ACPE by reason of threatened or existing legal challenge before a court of law or governmental agency as provided in the last paragraph may be reinstituted by the complainant by written notice to ACPE within thirty (30) days after the latter of (a) a final judgment by the court of law or governmental agency or (b) finalization of any appeal of such judgment. The Executive Director may proceed with the investigation of the complaint held in abeyance without notice by the complainant if the Executive Director determines, in his or her discretion, that such is warranted due to the severity of the complaint and potential impact on the quality of the program and the effect on students.

ACPE will consider formal complaints about Doctor of Pharmacy programs (PharmD) that allege a program is either (a) not in compliance with one or more of ACPE's Standards and Key Elements, or (b) has violated any of ACPE's expectations related to academic integrity. The complaint must specify which Standard(s) or Key Element(s) are implicated or how the program violated expectations of integrity. Complaints fall into one of two categories: (1) those that involve situations subject to formal institution/program due process policies and procedures and (2) those that involve situations not subject to formal due process procedures: 1) If the complainant is involved with an institution/program grievance subject to formal due process and procedure, ACPE requires that the process be completed prior to initiating ACPE's formal complaint process, unless the complaint includes an allegation that the institution/program process has not been handled in a timely manner as defined in the institution/program policy. In such cases, ACPE will consider the complaint prior to completion of the grievance process. Evidence of completion of the institutional process or of the untimely handling of such must be included in the complaint materials. 2) If the complaint is related to situations that fall outside of formal due process policies and procedures, the complaint may be filed at any time.

ACPE does not: 1) consider complaints that fall outside its jurisdiction/authority as expressed in the Standards and Key Elements and the academic integrity statements. When appropriate, complainants will be referred to other organizations to pursue their concern(s); 2) intervene on behalf of individuals or act as a court of appeal for faculty members or students in matters of admission, retention, appointment, promotion, course grading, or dismissal unless such practices or conditions indicate that the program may not be in compliance with the Standards and Key Elements; and 3) promise that it will force programs into specific resolutions requested by the complainant, but may instead require the program to comply with Standards and Key Elements. Such is in the sole discretion of ACPE. All complaints must be filed using the link found here: ([https://acpe-accredit.formstack.com/forms/complaint\\_form](https://acpe-accredit.formstack.com/forms/complaint_form))

Complaints that are submitted anonymously will not be considered by ACPE. Depending on the circumstances and severity of the complaint, it may or may not be forwarded to the program for information purposes only. The decision to forward a complaint is made by the ACPE Director of Program Accreditation or the ACPE Executive Director. During the eight-year cycle between each program's self-studies, a record of anonymous complaints received for the program will be maintained by ACPE.

ACPE will proceed expeditiously in the investigation and resolution of complaints in a manner that is fair and equitable to all parties. The ACPE Executive Director, or his/her designate, shall have the authority to: (i) review the complaint in order to determine relevance to the standards, policies, or procedures; (ii) dismiss a complaint if it is determined that such complaint has no merit or is outside the scope of ACPE accreditation activities; (iii) forward relevant complaints to the dean of the program for a response to ACPE; and (iv) conduct any further investigation deemed necessary to promptly determine the facts surrounding the issue and the validity of the complaint. ACPE shall diligently investigate and resolve complaints in a timely manner, taking into consideration all parties involved the severity and complexity of the allegations, and pursuant to any legal obligations.

If, on the basis of such investigation, after notice to the program and opportunity for response from the program, the Executive Director finds a complaint to be extremely serious in nature, charging egregious conduct that may warrant adverse action by ACPE, or involve an interpretation that the Executive Director believes should be made by the Board, the complaint will be submitted to the Board for consideration at the next regular meeting. Where the Board finds that a program has

violated the standards, engaged in unethical conduct, or that its integrity has been seriously undermined, the Board will either: (A) request that the program show cause, within a stated time period, as to why adverse action should not be taken; or (B) in extreme cases, immediately discontinue its relationship with the program by denying or withdrawing the offending program's accreditation status.

A record of complaints regarding a specific college or school is maintained in perpetuity at the ACPE office for future consideration. The complaint file will be reviewed as a component of the on-site evaluation process. Site team leaders will review all complaints received against a program since the time of the program's last comprehensive on-site evaluation with all members of the team. Information provided to the evaluation team will include the following for any complaint: (1) the nature of each complaint; (2) the process used to review the complaint; and (3) the status of the complaint. The evaluation team's review of complaints will be documented in the Evaluation Team Report. Any complaints received since the prior on-site evaluation and the related investigative materials will be provided to the ACPE Board of Directors as a component of the review process. The Board will also conduct a general review of all open complaints at each meeting, including those against a program not being considered for initial or continued pre-accreditation or accreditation at a given meeting.

Where a complainant has threatened or filed legal action in a court of law or before a governmental agency against a program or institution housing said program, ACPE reserves the right to hold such complaint in abeyance until after a final judgment by a court of law or governmental agency or finalization of any appeal of such judgment.

## **GENERAL INFORMATION**

### **FINANCIAL AID**

#### **Tuition and Fees – School of Pharmacy 2025-2026**

|                  |          |
|------------------|----------|
| Tuition          | \$41,000 |
| Consolidated Fee | \$2,000  |

Financial aid is available to students in the form of federal student loans, Maryland state scholarships, and limited institutional assistance. Students interested in receiving financial aid must meet certain eligibility requirements including: be enrolled for at least five credits per semester (half time enrollment for Pharmacy students), be in good academic standing (see Financial Aid Academic Standards Policy on the web), and be a matriculant in a degree program. Students who do not meet these criteria may be able to apply for private student loans.

The Office of Financial Aid website, <http://ndm.edu/admissions-aid/financial-aid/contact-us> provides detailed and up-to-date information on the types of aid available, how to apply, policies and procedures, external scholarships for pharmacy students, deadlines, a checklist and more. It is the responsibility of all students to read and familiarize themselves with the information contained on the financial aid website. Students have access to their own financial aid data 24 hours a day on Self-Service.



## **SCHOLARSHIPS**

*Scholarship availability is dependent on funding and may vary each year. Eligibility criteria may also vary each year based on requirements of the scholarship sponsor.*

### **Dr. Ann Clare Supple Kessler Endowed Scholarship in Pharmacy**

This admission scholarship is awarded to students who meet criteria determined by the Admission Committee and have financial need. GPA of 3.0 or above is required.

### **Rosskopf Family Scholarship**

All matriculated female students are eligible. Student must be female, a resident of MD, VT, or any other state (residency preference is in the list of priority). GPA of 3.0 or above is required.

### **Maryland In-State Grant**

New students who are Maryland residents are eligible for this in-state grant. This grant cannot be combined with any other institutional scholarship.

### **School of Pharmacy Merit Scholarship**

This admission scholarship is awarded to students who have excelled academically and who have demonstrated through their extracurricular activities the potential to be an outstanding pharmacist. Awardees must maintain a 3.0 GPA at the end of each semester in order to retain the scholarship.

### **School of Pharmacy Multilingual Scholarship**

This \$20,000 four-year (\$5,000 per year) admission scholarship is awarded to students who are fluent (at advanced level) in a second language other than English. Awardees must maintain a 3.0 GPA at the end of each semester in order to retain the scholarship.

### **Foundation Scholarship**

This scholarship is provided by the graduating class. All P1-P2-P3 students are eligible with a minimum GPA of 2.5 and no professionalism violations.

#### **Alumni Scholarship**

This scholarship is provided by the Alumni of NDMU SOP. All P1-P2-P3 students are eligible with a minimum GPA of 2.5 and no professionalism violations.

#### **Walgreens Diversity & Inclusion Excellence Award**

P1, P2, P3 students are eligible. Additional criteria will be provided at the opening of each application cycle.

#### **Walgreens Multilingual Scholarship**

P1, P2, P3 students are eligible. Additional criteria will be provided at the opening of each application cycle.

#### **Housing Scholarship**

P1 eligible students are awarded one-year housing scholarship for which they receive free housing (double occupancy and dependent on availability) for the P1 year upon matriculation. This does not include board.

### **Student Academic Records (FERPA)**

Academic records and transcripts are also housed in the registrar's office. Notre Dame of Maryland University has a commitment to protect the confidentiality of student records. The Family Educational Rights and Privacy Act ([FERPA](#)) provide students with certain rights with respect to their education records. These include: the right to inspect and review their records; the right to request an amendment of the student's education record they believe is inaccurate; the right to consent to disclosure of personally identifiable information contained in the student's record (except where FERPA authorizes disclosure without consent). One exception that permits disclosure without consent is for school/university officials with legitimate educational interests. For more detailed information on academic records (<http://ndm.edu/registrarstudent-records>)

Students have the ability to provide an approval for others (parents, spouses, etc.) to have access to educational and financial records by completing an Authorization to Release Student Information form ([http://ndm.edu/sites/default/files/pdf/univ-ferpa\\_2.pdf](http://ndm.edu/sites/default/files/pdf/univ-ferpa_2.pdf))

Directory information may be released to the general public without prior written consent. Notre Dame considers the following to be directory information: name, date and place of birth, address and phone number, classification, degrees and awards received, major/concentration/minors, dates of attendance and participation in athletics/official NDMU activities. Students must send a written request to the registrar's office before the first Friday of each semester to place a hold on the release of any of this directory information. The hold is valid for one semester and must be submitted at the beginning of each subsequent semester. If a hold is placed on the release of information, that hold prohibits the release of all items of directory information to all outside persons, organizations or agencies.

### **Privacy Rights of Students**

<https://ndm.edu/registrar/student-records>

### **File Confidentiality and Availability**

<https://ndm.edu/registrar/student-records>

### **Additional Academic Files**

Faculty advisors have access to the academic records of their advisees. The Office of the Dean have access to the academic records of matriculated School of Pharmacy students. They also maintain a checklist of the student's progress toward degree requirements. These files are retained for the advisor's use only and are not official records or documents.

Any additional academically related files held by individual members of the faculty and/or administration are for the use of the individual holder only.

### **Release of Records**

#### Transcripts

<https://ndm.edu/registrar/transcripts>

### **Directory Information**

<https://ndm.edu/registrar/student-records>

### **Address of Record**

All correspondence from University offices is sent to the student's priority address on file in the Registrar's office. Any change to this address should be reported to the Registrar's office as soon as possible. Failure to keep this address up to date may result in delays in receiving important information. It is the student's responsibility to provide the University with correct address information.



## Program

The School of Pharmacy offers the Doctor of Pharmacy degree; the entry-level degree required for practice in the U.S. Students must complete the required prerequisite coursework at Notre Dame of Maryland University or another institution of higher education and 142.5-154.5 credits of coursework (4 years) within the School of Pharmacy.

The parent institution of the School of Pharmacy, Notre Dame of Maryland University, has been granted authority by the Maryland Higher Education Commission to confer the Doctor of Pharmacy degree.

## Admissions

The School will consider for admission those applicants who possess the academic and professional promise necessary to become outstanding members of the pharmacy profession. The admissions process is highly selective. An applicant must submit an application via the [Pharmacy College Application Service \(PharmCAS\)](#).

Evaluation of completed applications (PharmCAS) will begin in September 2025 and continue until all seats in the class are filled. This initial evaluation will determine which applicants are eligible for an on-campus interview; a final evaluation will determine which applicants are eligible for acceptance. Given the competitive admissions environment, multiple criteria are used to select the most qualified candidates. Grade point averages, letters of recommendation, professional preparedness and motivation, personal qualities, communication skills, ability to be a team player and decision making will all be considered when reviewing an applicant's file.

For more information, contact Norah Moturi, director of admissions for the School of Pharmacy, at 410-532-5597 or e-mail [nmoturi@ndm.edu](mailto:nmoturi@ndm.edu)

### Requirements for Applicants Seeking Admission for Fall 2026

To be considered for admission to the School of Pharmacy, an applicant must:

1. Have completed or be in the process of completing 52 semester hours (68 quarter hours) or equivalent hours of non-remedial, prerequisite coursework from a regionally accredited U.S. university. The student must earn a grade of C (not C minus) or better in each prerequisite course.
2. International applicants must complete a minimum of 30 semester hours of nonremedial prerequisite coursework from a regionally accredited college or university in the United States. Of the 30 semester hours, 15 hours must be in the sciences, six hours in non-remedial English composition, and three hours in speech/public speaking. These additional requirements are waived for applicants who completed their prerequisite coursework at a post-secondary Canadian institution that uses English as its primary language of instruction and documentation.
3. All pre-pharmacy coursework requirements must be completed by the end of summer session II prior to matriculation to the School of Pharmacy.
4. Earn, preferably, a cumulative grade point average and science grade point average of 2.50 on a 4.00 scale. PharmCAS calculates the overall and science grade point average. Grades

from all non-remedial courses completed post-high school are used to calculate the grade point average.

5. Possess a people/service orientation as demonstrated through community service or extracurricular activities.
6. Possess the proper motivation for and commitment to the pharmacy profession as demonstrated by previous work, volunteer, or other life experiences.
7. Complete the School of Pharmacy's on-campus interview process (by invitation only).

**Prerequisite Courses for *students completing coursework at other colleges or universities of higher learning.***

| Course                     | Semester Credit Hours |
|----------------------------|-----------------------|
| English                    | 6                     |
| Speech/Public Speaking     | 3                     |
| Calculus                   | 3                     |
| Statistics                 | 3                     |
| General Chemistry with Lab | 8                     |
| Organic Chemistry with Lab | 8                     |
| General Biology with Lab   | 8                     |
| Microbiology with Lab      | 4                     |
| Anatomy & Physiology       | 6                     |
| Physics                    | 3                     |

**Recommended Pre-Pharmacy Curriculum completed at *Notre Dame of Maryland University***

*Notre Dame of Maryland University reserves the right to revise the curriculum at any time when deemed necessary and to apply such revisions to registered and accepted students and to new admissions.*

| Course                                                                              | Credits |
|-------------------------------------------------------------------------------------|---------|
| ENG-101 College Writing                                                             | 3       |
| ENG Literature Course                                                               | 3       |
| COM-106 or 206 Fundamentals of Oral Communication/Speaking in Professional Settings | 3       |
| PHL 339 Medical Ethics                                                              | 3       |
| ECO-211 or 212 Macro-or-Microeconomics                                              | 3       |
| MAT-211 or 212 Calculus I or II                                                     | 4       |
| MAT-215 Basic Statistics                                                            | 3       |
| CHEM-110, 111 General Chemistry                                                     | 8       |
| CHM-210, 211 Organic Chemistry                                                      | 8       |

|                                                                                                                                                                                                     |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| BIO-111 Fundamentals of Biology                                                                                                                                                                     | 4         |
| BIO-201, 202 Human Anatomy and Physiology I, II *                                                                                                                                                   | 8         |
| BIO-340 Microbiology                                                                                                                                                                                | 4         |
| BIO-239 Genetics                                                                                                                                                                                    | 4         |
| PHY 101 or 102 General Physics I or II                                                                                                                                                              | 4         |
| Social Sciences                                                                                                                                                                                     | 6         |
| NDMU-100 First Year Seminar                                                                                                                                                                         | 3         |
| Elective credits from religious studies, fine arts, humanities, languages, business or interdisciplinary studies, <b>excluding</b> science, mathematics, physical education or health care courses. | 3         |
| <b>Total Credits</b>                                                                                                                                                                                | <b>74</b> |



## Technical Standards for Admission & Continued Matriculation

Notre Dame of Maryland University School of Pharmacy must evaluate not only the scholastic aptitude of each and every student, but also must consider students' current ability to safely apply their knowledge and skills to effectively interact with patients and others in educational and healthcare settings. Graduates of the School of Pharmacy are eligible to become pharmacists without restrictions on their practice; therefore, the curriculum requires students to successfully complete all components of the program. Depending on the circumstances, some reasonable accommodation may be possible and made available to students with disabilities in accordance with University policy, state, and federal laws. However, a student must be able to perform in a reasonably independent manner. Upon request of the student, the University will make good faith efforts in providing reasonable accommodation as required by law.

The School of Pharmacy engages in an interactive process with applicants and students with disabilities and complies with all state and federal laws regarding reasonable accommodation. The School of Pharmacy adheres to the highest ethical and professional standards of the pharmacy profession. While the School of Pharmacy will attempt to identify ways of opening the curriculum to competitive, qualified disabled students, the School must maintain the integrity of its curriculum and preserve those elements deemed essential to educating a pharmacist. As such, the School of Pharmacy reserves the right deny admission or dismiss any student who, upon completion of the interactive process, is unable to meet these technical standards with reasonable accommodations and/or would be deemed to pose a threat to patients and others in the educational and healthcare environment.

The following technical standards, although not exhaustive, describe the basic-non-academic qualifications required in addition to academic achievements, which the School of Pharmacy considers essential for admission and successful completion of the educational objectives of its curriculum.

A student must have abilities and skills in five areas: 1) observation; 2) communication; 3) motor; 4) intellectual, conceptual, integrative, and quantitative; and 5) behavioral and social. Technological compensation can be made for some limitation in certain of these areas, but a candidate should be able to perform in a reasonably independent manner.

1. **Observation:** The student must be able to accurately make observations at a distance and close at hand. Observation necessitates the functional use of the sense of vision and somatic sensation and is enhanced by the functional use of all of the other senses.
2. **Communication:** The student must be able to communicate effectively, efficiently and sensitively in both oral and written form and be able to perceive nonverbal communication. Students must be able to read, write, speak and comprehend English with sufficient mastery to accomplish didactic, clinical and laboratory curricular requirements in a timely, high-quality professional and accurate manner.
3. **Sensory and Motor:** Students must be able to coordinate both gross and fine muscular movements, maintain equilibrium and have functional use of the senses of touch and vision. The student must possess sufficient postural control, neuromuscular control and eye-to-hand coordination to perform profession-specific skills and tasks.
4. **Intellectual, Conceptual, Integrative and Quantitative Abilities:** The student must be able to problem solve, calculate, reason, analyze, record and synthesize large amounts of information in a timely manner. The student must be able to comprehend three-dimensional relationships and understand spatial relationships. Students must be able to learn in various conditions and environments including the classroom, laboratory, small groups, experiential settings and independent study.
5. **Behavioral and Social Attributes:** Students must demonstrate maturity, integrity, compassion and respect for others. The student must possess the emotional and mental health required for full utilization of his/her intellectual abilities, the exercise of good judgment and the consistent, prompt completion of all responsibilities and the development of mature, sensitive and effective relationships. The student must have the capability to recognize and show respect for differences in culture, values and ethics among people. Students must be able to tolerate physically, mentally and emotionally taxing workloads, function effectively under stress, and must display appropriate coping responses. The student must be able to adapt to changing environments, to display flexibility, and to learn to function in the face of uncertainties. Compassion, integrity, concern for others, effective interpersonal skills, willingness and ability to function as an effective team player, interest and motivation to learn are all personal qualities required during the educational process.

An individual with a diagnosed psychiatric disorder may function as a pharmacy student as long as the condition is under sufficient control to allow accomplishment of the above goals with or without reasonable accommodation. He or she must exhibit behavior and intellectual functioning that does not differ from acceptable standards. In the event of deteriorating emotional function, it is essential that a pharmacy student be willing to acknowledge the disability and accept professional help before the condition poses danger to self, patient, and colleagues.

Candidates must provide certification that they understand the technical standards upon their acceptance. Candidates who may not meet the technical standards are encouraged to contact the Director of Admissions to discuss and identify what accommodations, if any, the School of Pharmacy would need to make in order that the candidate might be able to meet the standards.

## **Professionalism**

Pharmacy applicants are expected to act professionally in all of their dealings with admissions office staff and School personnel. Applicants are expected to follow instructions properly and meet deadlines and abide by the Code of Conduct on the PharmCAS website. Responsible behavior, respect for others, good judgment and cooperation are qualities valued by the pharmacy profession. Applicants should demonstrate these qualities beginning with the application process



## **Application Process**

The School of Pharmacy uses a two-step application process. The applicant must submit both a completed PharmCAS application and meet the PharmCAS application deadline.

### ***1. PharmCAS Application***

Applicants must apply via the [PharmCAS](http://www.pharmcas.org) application ([www.pharmcas.org](http://www.pharmcas.org)) which is available usually in June of the academic year preceding the year in which they plan to matriculate. Applicants must send transcripts directly to the offices of PharmCAS. Applicants who have taken coursework and/or earned a degree from a foreign institution must also submit to PharmCAS an evaluation of their transcripts from one of the following approved foreign transcript evaluation services:

- Education Credential Evaluators (ECE): 414-289-3400, [www.ece.org](http://www.ece.org)
- World Education Service (WES): 212-966-6311, [www.wes.org](http://www.wes.org)
- Josef Silny & Associates, Inc.: 305-273-1616, [www.jsilny.com](http://www.jsilny.com)

### **Summary of Deadlines**

| Required Process     | Deadline     |
|----------------------|--------------|
| PharmCAS Application | June 1, 2026 |

The deadline for submitting a PharmCAS application for is **June 1, 2026**. In addition to the online application and application fee, applicants are strongly encouraged to also forward official transcripts from all colleges and universities attended to PharmCAS by May 1. PharmCAS will not consider an application complete and will not begin the verification process until all official transcripts are received. The School will only receive complete applications from PharmCAS.

## 2. ***Letters of Recommendation***

The applicant must request letters of recommendation from **three** individuals to be submitted directly to PharmCAS. The School of Pharmacy will only accept letters received directly from PharmCAS. One letter must be from a University professor who has actually taught the applicant in a science course and the other two letters may be from a pre-health advisor/committee, science or other University professor that taught the applicant, an employer who had direct supervisory responsibilities for the applicant or a health professional who knows the applicant well. Letters of reference must be received by the PharmCAS deadline date of **June 1, 2026**.

## 3. ***Interview***

Once an applicant's file is complete, the director of admissions and the admissions committee review an applicant's GPA to determine the applicant's interview eligibility. If they consider the applicant eligible for an on-campus or virtual interview, an invitation will be sent to the applicant. All interviews are scheduled on a first-call/first-scheduled basis. No interviews will be granted until an individual's application process is complete.

During the interview process, the applicant will meet with an interviewer consisting of pharmacy faculty members or practicing pharmacists. Interviewers will evaluate the applicant's professional motivation and preparedness, personal qualities, communication skills, and decision-making ability by rating the applicant on a standardized evaluation scale. The interviewers will also review each interviewee's PharmCAS application to facilitate the interview process. After reviewing the applicant's completed application and interview evaluation, the admissions committee can recommend accepting, denying, or placing the applicant on an alternate list pending further information. This recommendation is then forwarded to the Dean for final approval.

Applications to the School of Pharmacy are processed and reviewed during regular intervals in the admissions cycle until the class is filled.

**Note:** *An applicant who has been accepted for a given year must matriculate during that year. No admission deferments are allowed. If a student fails to matriculate, the student must reapply the following year if he/she wishes to be admitted to the School.*

## 4. ***Reapplication Process***

Applicants who are denied admission may re-apply to the School the following academic year. It is strongly recommended that applicants seek guidance from the Office of Admissions for strengthening their application. If an applicant wishes to re-apply, a new application must be submitted to PharmCAS and the application will be processed in the same manner as any other application.

#### 5. ***Readmission of Matriculated Students***

Students who were dismissed due to poor academic performance or ethical and professional infractions will not be re-admitted.

A student who voluntarily withdrew or were administratively withdrawn from the School may apply for re-admission by contacting the Dean of the School of Pharmacy. Before re-applying, former students are encouraged to meet with the Dean regarding re-admission. The application and its associated documents must be submitted no later than 60 calendar days prior to the first day of classes before the semester in which readmission is sought. In addition to the application, the following must be submitted:

- A letter stating the reason the student withdrew from the School and reasons for returning to the School. The content of the letter must provide full explanation of the circumstances.
- A detailed plan for how the student will successfully complete the program.
- Additional supporting documents as needed and/or those requested by the School

Re-admission will only be considered for former students who separated from the School for a period of less than two years. Re-admission is discretionary and is not guaranteed.

#### **Transfer Admission from Another Pharmacy School**

The Notre Dame of Maryland University (NDMU) School of Pharmacy and Health Professions (SPHP) may accept transfer students from other Accreditation Council for Pharmacy Education (ACPE)-accredited pharmacy schools or colleges as long as these students are in good academic and disciplinary standing and have legitimate reasons for seeking a transfer. All requests for transfer information should be referred to the Office of Admissions so that the potential transfer applicant can be counseled prior to application submission. To be considered for transfer, a student must meet the School of Pharmacy's general requirements for admission. The student must also submit the following documents by June 1:

1. A letter to the Director of Admissions indicating why the student wishes to transfer and explaining any difficulties encountered at the student's current institution;
2. A completed the Pharmacy transfer application;
3. Official transcripts from all schools attended—undergraduate, graduate, and professional;
4. A detailed pharmacy syllabus for any courses for which a credit transfer consideration is requested (*due to differences in curricula, a student may not receive transfer credit*);
5. A letter from the Dean of the school or college of pharmacy in which the student is enrolled. The letter must indicate the student's current academic and disciplinary status and/or terms of withdrawal/dismissal; Student must provide permission for NDMU SPHP to contact the program for verification;

6. One letter of recommendation from a faculty member at the current school or college of pharmacy; and
7. Additional documents or letters of recommendation as determined necessary by the Director of Admissions or the Dean of SPHP.

The Office of Admissions will collect and forward the student's portfolio to the dean of academic affairs, School of Pharmacy, for review. If the transferring student has a potential for transfer or if further information is needed, the dean of academic affairs or their designee will invite the student for an interview.

### **Admission Affiliation Agreements**

The School of Pharmacy offers following admission affiliations:

- 2 + 4-year undergraduate - professional school option leading to the Baccalaureate in Liberal Arts with a focus on Pharmaceutical Sciences and the Doctor of Pharmacy (Pharm.D.) degrees for students attending Notre Dame of Maryland University
- Accelerated 3 + 4-year undergraduate - professional school option leading to the Baccalaureate in Biology or Chemistry and the Doctor of Pharmacy (Pharm.D.) degrees for students attending Notre Dame of Maryland University, Carroll College, Millersville University, University of San Grado Corazon, Pontifical Catholic University-Puerto Rico, and the University of Hartford.
- 4 + 4 agreement with Loyola University Maryland, St. Edward's University, St. Peter's University, and the School of Pharmacy leading to a Baccalaureate in Biology, Chemistry, Biology-Chemistry Interdisciplinary degree or other appropriate majors and a Doctor of Pharmacy degree.

Please refer to each university's/college's catalog for more information.

### **Matriculation Process**

The matriculation process begins after a student receives notification of his/her acceptance. The student must return his/her signed matriculation agreement. The student must also do the following:

1. Submit deposit monies by the dates designated in his/her matriculation agreement. The entire amount is applied toward the student's first semester's tuition.
2. Submit official final transcripts from all colleges and universities attended post-high school by the deadline of two weeks (14 calendar days) prior to the first day of orientation. For students who are accepted to the School less than one month prior to the first day of classes, they will have 30 calendar days from the date of their acceptance to submit all official transcripts to the office of admissions. Any special circumstances or requests for exceptions to this policy must be made by the office of the dean of the School. If students fail to submit all official final transcripts by the stated deadline, then their acceptance or continued enrollment in the School may be jeopardized.  
**Note: PharmCAS does not forward transcripts to the School of Pharmacy.**
3. Complete a medical file as requested by the office of the dean.

4. Submit proof of medical and disability insurance coverage. The student may select either a plan offered by a university approved outside carrier or a comparable plan offered by an outside carrier of the student's choice.
5. Non-U.S. citizens/non-permanent residents must provide documentation verifying that sufficient funds have been deposited in a U.S. bank to cover all expenses while attending School of Pharmacy at Notre Dame of Maryland University (for non-U.S. citizens/temporary residents who hold a student visa only).
6. Sign an authorization form allowing a criminal background check.
7. Complete a urine drug screen
8. Sign a Notre Dame of Maryland University Drug Free Policy statement.
9. Complete a physical exam and submit the appropriate form.
10. Provide documentation that any additional coursework or service requirements stipulated by the admissions committee have been completed.
11. Submit additional documents as requested by the office of admissions.
12. Satisfy Technical Standards for the Program and sign acknowledgment for receipt of these requirements.
13. Sign authorization for use of academic information for quality improvement purposes.
14. Submit a signed licensure disclosure form.

If a student either fails to satisfy the above matriculation requirements or omits/falsifies information required on any official admissions documents, the student automatically forfeits his/her seat at the School of Pharmacy. The student receives no further notification from School of Pharmacy relative to this forfeiture.

### **Criminal Background Check Policy**

National concerns regarding the suitability of health care providers have caused many hospitals and other institutions that provide health care services to require disclosure of an individual's criminal history. As of 2004, the Joint Commission, an organization that accredits healthcare organizations in the United States, requires criminal background checks for security purposes for all employees, staff and volunteers who supervise care, render treatment and provide services. Many state statutes also require disclosure of an individual's criminal history in order to apply for certain health care licenses/permits/certificates/registrations. Additionally, existence of a criminal history may subject an individual to denial of initial licensure, permit, registrations, revocation or suspension of existing licenses or denial of access to training sites used by the School of Pharmacy.

The primary role of the pharmacist is to provide safe and effective health care to the patients served. Patient safety must be considered in the selection and education of student pharmacists. The School also has a responsibility to maintain as safe an environment as possible for its students and the practice settings in which they receive education. Therefore, to promote safety and the highest level of integrity in the profession of pharmacy, the School of Pharmacy requires matriculating students to submit to a criminal history background check.

1. All applicants and matriculating students are to submit to a criminal background check prior to matriculation. In addition, students who remain enrolled must submit to a criminal background check annually to remain eligible for continued matriculation. Some students may be required to undergo fingerprinting as part of the criminal background check process as part of applicable state law. The initial and annual criminal background check will be conducted by the Certiphi, Inc. or another School of Pharmacy approved vendor.

2. Additional criminal background checks may be required by health care facilities at which the student will be participating in educational activities as a component of the curriculum or state agencies relevant to the education of the student.
3. Students must disclose all criminal convictions (felony and misdemeanor) regardless of whether or not the felony conviction was subsequently reduced to a misdemeanor. Failure to disclose a conviction, or material misrepresentation of information, is deemed to be falsification of the application and will result in denial of matriculation and/or dismissal from the School and University.
4. Failure to comply with the request to undergo a criminal background check within the stipulated timeline will result in dismissal from the School or revocation of the offer of admission.
5. Students with a positive criminal background history are individually responsible for checking the licensing requirements of any state other than the state of Maryland where the student is interested in participating in clinical rotations to determine whether or not their conviction may be a barrier to participation.
6. The School of Pharmacy does not guarantee clinical rotations or any other off campus activity for students who have a history of felony or misdemeanor convictions. In such cases, the School will confidentially share information about the student's positive criminal background history with potential preceptors and practice site representatives as necessary and on a need-to-know basis and gives the preceptor and site representatives an opportunity to decide whether the student is acceptable to the site. Therefore, scheduling and completion of clinical rotations and graduation may be delayed. In some instances, it will not be possible to arrange for clinical rotations at specific sites.
7. Students are required to disclose to the dean any arrests, criminal charges or convictions against them during their entire period of enrollment as a student at the School of Pharmacy. Such arrests, criminal charges, or convictions may negatively impact a student's ability to obtain and/or complete program requirements.
8. All costs are the responsibility of the student.

### **Procedure**

1. All accepted and matriculated students will be required to undergo a criminal background check by the School of Pharmacy approved vendor, Certiphi, Inc. Newly admitted students will be given a copy of the School's Criminal Background Check Policy.
2. Certiphi, Inc. will contact the student directly to obtain the necessary information to initiate the search. Students will receive an email from [studentedition@certiphi.com](mailto:studentedition@certiphi.com).
3. Upon completion of the search, results will be released to the student who can view the information securely online. The student will have the opportunity to view the information and to resolve any disputes directly with the vendor. After 10 calendar days, the report will be automatically released to the School.

4. The office of admissions will review all criminal history reports and if a history of a felony or misdemeanor conviction exists, the director of admissions in consultation with the dean or her designee, will determine whether or not the student should be disqualified from matriculation or continued enrollment. Criminal convictions will not automatically disqualify a student from enrollment or continued enrollment. The School will consider such factors, but not limited to, the nature of the crime, the age of the individual at the time the crime was committed, length of time since the conviction, relevance of the conviction to health care. In determining the impact and relevance of the conviction, the following information, but not limited to, may be requested:
  - a. Additional detailed information about the positive criminal background check report.
  - b. Consultation with state licensing agencies about the impact of the misdemeanor or felony conviction on the student's ability to undertake/resume clinical activities.
  - c. Collection of additional data, e.g., Federal Bureau of Investigation fingerprints and report, concerning the positive criminal background check.
  - d. Court charging documents or other official records pertaining to the charge and/or conviction.
5. If a positive criminal history is known by the School prior to or after the student's matriculation, the dean or her designee will meet with the student to discuss the consequences of the positive criminal background investigation on the student's ability to enter or complete the program and graduate so that appropriate action can be taken.
6. Continuing students' annual criminal background check will be reviewed by the assistant dean for student affairs and if criminal charges or convictions are noted, the assistant dean in consultation with the dean will determine if continued enrollment as noted in 4 above.
7. Printed records concerning a student's positive criminal background check are stored in a locked confidential file in the office of the dean.



## CURRICULUM

### School of Pharmacy Curriculum\*

*NDMU School of Pharmacy reserves the right to revise the curriculum at any time when deemed necessary and to apply such revisions to registered and accepted students, and to new admissions.*

| Year      | Fall Semester<br>(16.5 credits)                                                | Credits        | Spring Semester<br>(20.5 credits)                         | Credits        |
|-----------|--------------------------------------------------------------------------------|----------------|-----------------------------------------------------------|----------------|
| <b>P1</b> | PHRD 321 Calculations I: Fundamentals                                          | 2              | PHRD 322 Calculations II: Compounding                     | 2              |
|           | PHRD 323 Pharmaceutics I                                                       | 3              | PHRD 324 Pharmaceutics II & Lab                           | 4              |
|           | PHRD 325 Principles to Biochemistry & Pharmacology                             | 4              | PHRD 326 Principles of Immunology                         | 2              |
|           | PHRD 327 Human Physiology and Pathophysiology                                  | 3              | PHRD 328 Nonprescription Therapy and Self-Care            | 3              |
|           | PHRD 331 Pharmacy Fundamentals I: Professional Identity                        | 2              | PHRD 330 Medicinal Chemistry & Drug Action                | 3              |
|           | PHRD 333 Pharmacist Care Lab I                                                 | 1              | PHRD 334 Pharmacist Care Lab II                           | 1              |
|           | PHRD 329 Commonly Used Medications I                                           | 1              | PHRD 338 Commonly Used Medications II                     | 1              |
|           | PHRD 801 Professional Development & Engagement I                               | 0.5            | PHRD 802 Professional Development & Engagement II         | 0.5            |
|           |                                                                                |                | PHRD 441 Introductory Pharmacy Practice Experiences I**   | 4              |
|           |                                                                                |                | Pre-IPPE Preparation Assessment I***                      | 0              |
| <b>P2</b> | <b>Fall Semester<br/>(15.5-20.5 credits)</b>                                   | <b>Credits</b> | <b>Spring Semester<br/>(17.5-20.5 credits)</b>            | <b>Credits</b> |
|           | PHRD 404 Pharmacist Care Lab III                                               | 1              | PHRD 406 Pharmacist Care Lab IV                           | 1              |
|           | PHRD 415 Pharmacotherapeutics: Pulmonary, Ophthalmic, & Dermatologic Disorders | 2              | PHRD 418 Pharmacotherapeutics: Gastrointestinal Disorders | 2              |

|           |                                                                         |                |                                                                                                  |                |
|-----------|-------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------|----------------|
|           | PHRD 417 Pharmacotherapeutics: Infectious Diseases                      | 4              | PHRD 420 Pharmacotherapeutics VI: Immunologic, Hematologic, Rheumatologic & Neoplastic Disorders | 4              |
|           | PHRD 423 Calculations III: Biopharmaceutics & Clinical Pharmacokinetics | 3              | PHRD 401 Clinical Research Design                                                                | 3              |
|           | PHRD 427 Commonly Used Medications III                                  | 1              | PHRD 428 Commonly Used Medications IV                                                            | 1              |
|           | PHRD 332 Pharmacy Fundamentals II: Operations Management                | 2              | PHRD 425 Pharmacy Fundamentals III: Leadership Development                                       | 2              |
|           | PHRD 803 Professional Development & Engagement III                      | 0.5            | PHRD 804 Professional Development & Engagement IV                                                | 0.5            |
|           | Professional Elective***                                                | 1-3            | Professional Elective***                                                                         | 1-3            |
|           | Professional Elective***                                                | 1-3            | PHRD 442 Introductory Pharmacy Practice Experiences II**                                         | 4              |
|           |                                                                         |                | Pre-IPPE Preparation Assessment I***                                                             | 0              |
| <b>P3</b> | <b>Fall Semester<br/>(13.5-20.5 credits)</b>                            | <b>Credits</b> | <b>Spring Semester<br/>(17.5-20.5 credits)</b>                                                   | <b>Credits</b> |
|           | PHRD 504 Pharmacists Care Lab V                                         | 1              | PHRD 506 Pharmacists Care Lab VI                                                                 | 1              |
|           | PHRD 510 Longitudinal Care I                                            | 1              | PHRD 521 Pharmacy Law & Ethics                                                                   | 3              |
|           | PHRD 525 Calculations IV: Clinical Applications                         | 2              | PHRD 509 Evidence Based Medicine                                                                 | 2              |
|           | PHRD 514 Pharmacotherapeutics: Cardiovascular Disorders                 | 4              | PHRD 518 Pharmacotherapeutics: Central Nervous System Disorders                                  | 4              |
|           | PHRD 515 Pharmacotherapeutics: Renal Disorders                          | 2              | PHRD 519 Advanced Pharmacotherapeutics                                                           | 4              |
|           | PHRD 516 Pharmacotherapeutics: Endocrine Disorders & Women's Health     | 2              | PHRD 520 Public Health                                                                           | 2              |
|           | PHRD 527 Commonly Used Medications V                                    | 1              | PHRD 528 Commonly Used Medications VI                                                            | 1              |

|                       |                                                                     |     |                                                   |             |
|-----------------------|---------------------------------------------------------------------|-----|---------------------------------------------------|-------------|
|                       | PHRD 805 Professional Development & Engagement V                    | 0.5 | PHRD 806 Professional Development & Engagement VI | 0.5         |
|                       | Professional Elective****                                           | 1-3 | Professional Elective****                         | 1-3         |
|                       | Professional Elective****                                           | 1-3 | Pre-APPE Preparation Assessment***                | 0           |
| P4                    | Summer/Fall/Spring (39.5 credits)*****                              |     |                                                   | Credits     |
|                       | PHRD 700/760 Advanced Pharmacy Practice Ambulatory Care             |     |                                                   | 5/6         |
|                       | PHRD 701/761 Advanced Pharmacy Practice Acute Care General Medicine |     |                                                   | 5/6         |
|                       | PHRD 702/762 Advanced Health Systems Pharmacy Practice              |     |                                                   | 5/6         |
|                       | PHRD 703/763 Advanced Community Pharmacy Practice                   |     |                                                   | 5/6         |
|                       | PHRD 704/764Advanced Pharmacy Practice Elective I                   |     |                                                   | 5/6         |
|                       | PHRD 705/765 Advanced Pharmacy Practice Elective II                 |     |                                                   | 5/6         |
|                       | PHRD 706/766 Advanced Pharmacy Practice Elective III                |     |                                                   | 5/6         |
|                       | PHRD 710 (Fall) NAPLEX Review I                                     |     |                                                   | 0.5         |
|                       | PHRD 711 (Spring) NAPLEX Review II                                  |     |                                                   | 2           |
|                       | PHRD 807 Professional Development & Engagement VII (Fall)           |     |                                                   | 0.5         |
|                       | PHRD 808 Professional Development & Engagement VIII (Spring)        |     |                                                   | 0.5         |
| Total Program Credits |                                                                     |     |                                                   | 142.5-154.5 |

\*All Pharmacotherapeutics courses are taught sequentially within a semester.

\*\*The IPPE begins immediately after when the didactic portion of the semester is completed.

\*\*\* This milestone must receive a passing grade to progress to the next class level.

\*\*\*\* Students are required to complete a minimum of 6 credit hours of professional electives for graduation, which must be accomplished over a minimum of three (3) courses, with only one research elective to satisfy the requirement.

\*\*\*\*\*All APPE are five weeks in duration except for one APPE Block which is 6 weeks.



## COURSE DESCRIPTIONS

### Required Courses

#### P1 Fall

##### **PHRD 321 Calculations I: Fundamentals (2 credits)**

This course is the first part of a four-semester calculations series. This course introduces students to basic mathematical principles and their applications to pharmaceutical calculations in pharmacy practice. Through lectures, case-based problem-solving, and workshops, students will gain skills in calculating basic pharmaceutical properties and dosages. *Lecture two hours per week. Prerequisite: P1 standing*

##### **PHRD 323 Pharmaceutics I (3 credits)**

This is the first of a two-semester course sequence designed for students to learn the basic principles and application of physicochemical properties necessary for the design, development, and preparation of pharmaceutical dosage forms. Through lectures and active-learning strategies, students will learn the characteristics of various liquid dosage forms, methods of preparation, evaluation, and their applications in pharmacy practice. *Lecture three hours per week. Prerequisite: P1 standing*

##### **PHRD 325 Principles of Biochemistry and Pharmacology (4 credits)**

This course will provide students with a fundamental understanding of basic principles of biochemistry and pharmacology, such as nucleic acids, amino acids, and proteins followed by the pharmacology of enzyme binding, kinetics, and drug-receptor interactions. This will guide students toward developing knowledge and skills for pharmacotherapeutic courses. Students will acquire such knowledge through lectures, in-class discussions, and active learning strategies. *Lecture four hours per week. Prerequisite: P1 standing*

##### **PHRD 327 Human Physiology and Pathophysiology (3 credits)**

This course introduces first-year pharmacy students to the fundamental connections between anatomy and physiology with pathophysiology. Students will practice applying their knowledge through case-based discussions, fostering their critical thinking skills. Through lectures and interactive learning, students will gain a strong understanding of the human body systems, their

functions, and disease states necessary for foundational use in the pharmacotherapeutics series. *Lecture three hours per week. Prerequisite: P1 standing*

**PHRD 329 Introduction to Commonly Used Medications (1 credit)**

This is the first of a six-series course designed to develop the basic knowledge necessary for pharmacy practice with commonly used medications, medical terminology, and medical abbreviations and their clinical use. This course will explore the relationship between a medication's mechanisms of action and its indication, adverse drug reactions (ADRs), warnings, and precautions. Students will also develop study aids to help retain drug knowledge which they will need to provide medication education and counseling. At the end of this course, students will gain foundational knowledge and study techniques for commonly used medications. *Lecture one hour per week. Prerequisite: P1 standing*

**PHRD 331 Pharmacy Fundamentals I: Professional Identity (2 credits)**

The Pharmacy Fundamentals Series is designed to provide students with an in-depth look at the practice of pharmacy, roles and responsibilities of pharmacists, including non-traditional pharmacy roles, pharmacy operations and management, and leadership. This course series will be taught through the lens of fostering cultural humility to effectively serve diverse patient populations. This first course will provide an in-depth exploration of careers in pharmacy within the framework of a dynamic U.S. healthcare system. Through a blend of lectures, discussions, and case studies, students will gain insight into the diverse roles and responsibilities that pharmacists play to develop their professional identity. *Lecture two hours per week. Prerequisite: P1 standing*

**PHRD 333 Pharmacist Care Lab I (1 credit)**

This is the first of a six-semester sequence designed to integrate material from the curriculum and introduce selected practice-related topics. The goal is for students to apply information and practice skills for patient care, using the Pharmacist Patient Care Process (PPCP). Through active learning strategies, case discussions, and simulations with standardized patients, students will learn basic pharmacist skills such as collecting patient information to assess and counsel at increasing levels of complexity throughout the course sequence. *Laboratory three hours per week. Prerequisite: P1 standing*

**PHRD 801 Professional Development & Engagement I (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals, developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism. *Prerequisite: P1 standing*

**P1 Spring**

**PHRD 322 Calculations II: Compounding (2 credits)**

This course is the second part of a four-semester calculations series focusing on specific calculation skills that are important to practicing pharmacists. The students will apply the basic concepts and

calculation skills gained in Calculations I- Fundamentals. At the end of this course, students will be able to perform case-based calculations through problem-solving. *Lecture two hours per week.*

*Prerequisite: PHRD 321 Calculations I: Fundamentals*

### **PHRD 324 Pharmaceutics II with Lab (4 credits)**

This is the second of a two-semester Pharmaceutics course sequence with an integrated laboratory component. This course will concentrate on physical, chemical and biological principles that govern the formulation, stability and delivery of various solids, semisolids, transdermal, heterogeneous liquid and aerosol dosage forms along with biologics and biotech products. In the laboratory setting, students will develop, evaluate, document and label various compounded products. At the end of this course, students will gain knowledge of various dosage forms and skills in compounding for optimal patient care. *Lecture three hours per week & lab three hours per week. Prerequisite: PHRD 323 Pharmaceutics I*

### **PHRD 326 Principles of Immunology (2 credits)**

This course is an introduction to the organization, function and regulation of the immune system including the basic properties of humoral and cell-mediated immune responses, antigen and antibody structure and function, effector mechanisms, complement, major histocompatibility complexes, and cytotoxic responses. The role of these basic immunology principles in immunodeficiencies, autoimmune disorders, hypersensitivity reactions, immunity issues associated with transplantation, cancer and antibody-based drug therapy will also be covered. *Lecture two hours per week. Prerequisite: P1 Standing*

### **PHRD 328 Nonprescription Therapy and Self-Care (3 credits)**

This clinical course is designed to introduce nonprescription therapies, clinical assessment, and triage skills. A structured approach to self-care will be taught using established clinical processes. Students will learn the basic mechanisms of action, uses, precautions, important drug interactions, and adverse drug effects for commonly used nonprescription products and dietary supplements. This course will give students an understanding of how nonprescription and self-care products can be used safely and effectively and when a patient should be referred to other health care professionals. *Lecture three hours per week. Prerequisite: P1 Standing*

### **PHRD 330 Medicinal Chemistry and Drug Action (3 credits)**

This course will introduce concepts required to understand drug-chemical structures, their biological activities, and their physicochemical properties. It builds on principles of pharmacology and introduces concepts related to medicinal chemistry, dose-response theory, structure-activity relationships, absorption, distribution, metabolism, and excretion (ADME), homeostasis, and pharmacogenomics. By the end of this course, students will have gained the foundational knowledge necessary to understand drug action and their clinical applications. *Lecture three hours per week. Prerequisite: PHRD 325 Principles of Biochemistry and Pharmacology*

### **PHRD 334 Pharmacist Care Lab II (1 credit)**

This is the second of a six-semester sequence designed to integrate material from the curriculum and introduce selected practice related topics. The goal is for students to apply information and practice skills for patient care, using the Pharmacist Patient Care Process (PPCP). Through active learning strategies, case discussions, and simulations with standardized patients, students will learn drug information research skills, immunization techniques required for certification and how to assess and counsel patients at increasing levels of complexity throughout the course sequence. *Laboratory three hours per week. Prerequisite: PHRD 333 Pharmacist Care Lab I*

### **PHRD 338 Commonly Used Medications II (1 credit)**

This is the second of a six-series course designed to develop the basic knowledge necessary for pharmacy practice with commonly used medications and their clinical use. This course will explore the relationship between mechanisms of action with a drug's indication, adverse drug reactions (ADRs), and drug-specific warnings and precautions. Students will also develop study aids to help retain drug knowledge necessary to provide medication education and counseling. At the end of this course, students will have gained foundational knowledge and study techniques for commonly used medications. *Lecture one hour per week; Prerequisite: PHRD 329 Introduction to Commonly Used Medications*

#### **PHRD 802 Professional Development & Engagement II (0.5 credit)**

The purpose of this required course is for students to develop and achieve career goals through engagement and reflection on educational experiences and ultimately demonstrate professional growth and achieve learning outcomes over time. Faculty advisors will guide students in the process of developing their e-portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism. Students register for this course during designated semesters for the duration of the program and must successfully complete this course during designated semesters to meet graduation requirements. *Prerequisite: P1 standing*

#### **PHRD 441 Introductory Pharmacy Practice Experiences I (4 credits)**

In this course, students will complete four full-time weeks (160 hours) in a community pharmacy setting. This experience will introduce students to community pharmacy practice focusing on the drug distribution process, pharmacy management and operations, medication therapy management using the Pharmacist's Patient Care Process and patient counseling. Professionalism, communication, and an interprofessional approach to patient care will be emphasized and prepare students for the Advanced Pharmacy Practice Experiences. *Prerequisite: P2 standing*

### **P2 Fall**

#### **PHRD 332 Pharmacy Fundamentals II: Operations Management (2 credits)**

The Pharmacy Fundamentals Series is designed to provide students with an in-depth look at the practice of pharmacy and roles and responsibilities of pharmacists, including non-traditional pharmacy roles, pharmacy operations and management, and leadership. This course series will be taught through the lens of fostering cultural humility to effectively serve diverse patient populations. This course will provide an exploration into pharmacy business and operations management, examining the evolving role and complexity of the US Government and healthcare systems. It will examine pharmacists' impact on care delivery, considering both public and private insurers. Additionally, the course will focus on personnel management, including performance evaluation, hiring strategies, and employee retention. At the end of this course, students will develop a foundational business plan for the delivery of an innovative pharmacy practice model. *Lecture two hours per week; Prerequisite: P1 Standing*

#### **PHRD 404 Pharmacist Care Lab III (1 credit)**

This is the third of a six-semester sequence is designed to integrate material from the curriculum and introduce selected practice related topics. The goal is for students to develop the ability to apply information as well as practice skills that are taught throughout the curriculum. Emphasis is placed on the use of active learning strategies, case studies, role-plays, and presentations in order to engage students in the learning process. Students are expected to synthesize information at increasing levels of complexity as they progress through the course sequence. *Laboratory three hours per week. Prerequisites: P2 standing*

**PHRD 415 Pharmacotherapeutics: Pulmonary, Ophthalmic, and Dermatologic Disorders (2 credits)**

Pharmacotherapeutics (PT) is a team-taught series of courses, combining material from major content areas, including pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this Pulmonary, Ophthalmic, and Dermatologic Disorders Pharmacotherapeutics course, students will learn the pathophysiology and management of common respiratory conditions, such as asthma and chronic obstructive pulmonary disorder (COPD) as well as ocular and skin disorders like glaucoma and acne. Through lectures, utilization of the pharmacist patient care process, and interactive case-based discussions, students will develop proficiency to appropriately manage patient care and medication treatment of pulmonary disorders. *Lecture two hours per week; Prerequisites: P2 standing*

**PHRD 417 Pharmacotherapeutics: Infectious Diseases (4 credits)**

Pharmacotherapeutics (PT) is a team-taught series of courses, combining material from major content areas, including pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this pharmacotherapeutics course, students will review key concepts of microbiology and acquire foundational knowledge of common infections and the antimicrobials used to treat them. Through lecture, application of important resources, and case studies, students will be able to provide the appropriate management of bacterial, fungal, and viral infections. *Lecture four hours per week; Prerequisites: P2 standing*

**PHRD 423 Calculations III: Biopharmaceutics & Clinical Pharmacokinetics (3 credits)**

This course is the third part of a four-semester calculations series. This course focuses on calculations of biopharmaceutic and pharmacokinetic parameters. Topics such as absorption, distribution, metabolism and elimination as well as the effect of patient characteristics and disease states on drug disposition will be discussed. Through lectures, practice questions, and clinical quizzes, students will learn how to calculate pharmacokinetic parameters and appropriately apply them to drug dosing. *Lecture three hours per week; Prerequisite: P2 standing*

**PHRD 427 Commonly Used Medications III (1 credit)**

This is the third of a six series course designed to develop comprehensive knowledge necessary for pharmacy practice with commonly used medications and their clinical use. This course will explore the relationship between mechanisms of action with a drug's indication, adverse drug reactions (ADRs) and drug-specific warnings and precautions, with a focus on medications commonly used to treat pulmonary disorders, infectious disease, and men & women's health conditions. Students will also develop study aids to help retain drug knowledge necessary to provide medication education and counseling. At the end of this course, students will have gained foundational knowledge and study techniques for commonly used medications. *Lecture one hour per week; Prerequisite: PHRD 338 Commonly Used Medications II*

**PHRD 803 Professional Development & Engagement III (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals, developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-

awareness, leadership skills, creative thinking and planning, and professionalism. *Prerequisite: P2 standing*



### P2 Spring

#### **PHRD 401 Clinical Research Design (3 credits)**

This course will introduce the research models and biostatistics that are commonly used in clinical research. Emphasis will be placed on literature evaluation and the application of design models to hypothesis testing in clinical practice. Ethical principles of clinical research and the role of institutional review boards will also be discussed. *Lecture three hours per week; Prerequisite: P2 standing*

#### **PHRD 406 Pharmacist Care Lab IV (1 credit)**

This is the fourth of a six-semester sequence designed to integrate material from the curriculum and introduce selected practice related topics. Students will apply work on patient cases in community and health-system cases using mock health records, applying protocols, and explore journal club skills. Emphasis is placed on the use of active learning strategies, case studies, role-plays, and presentations in order to engage students in the learning process. Students are expected to synthesize information at increasing levels of complexity as they progress through the course sequence. *Laboratory three hours per week; Prerequisite: P2 standing*

#### **PHRD 418 Pharmacotherapeutics – Gastrointestinal Disorders (2 credits)**

Pharmacotherapeutics (PT) is a team-taught series of courses, combining material from major content areas, including pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this Gastrointestinal (GI) Disorders Pharmacotherapeutics course, students will learn the pathophysiology and management of common gastrointestinal disorders, such as portal hypertension (HTN), cirrhosis, viral hepatitis, pancreatitis, gastroesophageal reflux disorder (GERD), peptic ulcer disease (PUD), irritable bowel syndrome (IBS), nausea and vomiting. Through lectures, utilization of the pharmacist patient care process, and interactive case-based discussions, students will develop proficiency to appropriately manage patient care and medication treatment of GI disorders. *Lecture two hours per week; Prerequisites: P2 standing*

**PHRD 420 Pharmacotherapeutics – Immunologic, Hematologic, Rheumatologic & Neoplastic Disorders (4 credits)**

Pharmacotherapeutics (PT) is a team-taught series of courses, combining material from major content areas, including pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this Pharmacotherapeutics course, students will learn the pathophysiology and management of common Immunologic, Hematologic, Rheumatologic & Neoplastic disorders, such as autoimmune diseases, anemia, as well as cancer management and supportive care. Through lectures, utilization of the pharmacist patient care process, and interactive case-based discussions, students will develop proficiency to appropriately manage patient care and medication treatment of Immunologic, Hematologic, Rheumatologic & Neoplastic Disorders. *Lecture four hours per week; Prerequisites: P2 standing*

**PHRD 425 Pharmacy Fundamentals III: Leadership Development (2 credits)**

The Pharmacy Fundamentals Series is designed to provide students with an in-depth look at the roles and responsibilities of pharmacists, including non-traditional pharmacy roles, pharmacy operations and management, and leadership. This course series will be taught through the lens of fostering cultural humility to effectively serve diverse patient populations. The purpose of this third course in the series is to equip student pharmacists with the essential leadership skills required to excel in the evolving landscape of pharmacy practice. Through interactive discussions, case studies, and self-reflection, student pharmacists will explore various leadership models with a particular focus on the integration of emotional intelligence into professional pharmacy practice. Utilizing effective communication, and self-awareness with team dynamics is essential for pharmacists as educators, clinicians, and integral members of interprofessional healthcare teams. Further emphasis is placed on the significance of political advocacy in shaping the future of the pharmacy profession. By the end of this course, student pharmacists will develop a leadership philosophy that is tailored to the pharmacy profession and have the foundational skills and confidence to thrive as leaders in the pharmacy community. *Lecture two hours per week; Prerequisites: P2 standing*

**PHRD 428 Commonly Used Medications IV (1 credit)**

This is the fourth of a six series course designed to develop comprehensive knowledge necessary for pharmacy practice with commonly used medications and their clinical use. This course will explore the relationship between mechanisms of action with a drug's indication, adverse drug reactions (ADRs) and drug-specific warnings and precautions, with a focus on medications commonly used to treat gastrointestinal, hematologic, rheumatologic, dermatologic and ophthalmic conditions. Students will also develop study aids to help retain drug knowledge necessary to provide medication education and counseling. At the end of this course, students will have gained a foundational knowledge and study techniques for commonly used medications. *Lecture one hour per week; Prerequisite: PHRD 427 Commonly Used Medications IV*

**PHRD 442 Introductory Pharmacy Practice Experiences II (4 credits)**

In this course, students will complete four full-time weeks (160 hours) in a health-system setting. This experience will introduce students to pharmacy practice in health systems with a focus on the Pharmacist's Patient Care Process, medication-use systems, pharmacy management and operations, medication reconciliation and safety. Professionalism, communication, and an interprofessional approach to patient care will be emphasized and prepare students for the Advanced Pharmacy Practice Experiences. *Prerequisite: P2 standing*

**PHRD 804 Professional Development & Engagement IV (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals, developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism. *Prerequisite: P2 standing*

### P3 Fall

#### **PHRD 504 Pharmacist Care Lab V (1 credit)**

This is the fifth of a six-semester sequence designed to integrate material from the curriculum and introduce selected practice related topics. Students will simulate patient visits in inpatient and outpatient settings focusing on documentation and communication. Emphasis is placed on active learning strategies, case studies, role-plays, and presentations to engage students in the learning process. Students are expected to synthesize information at increasing levels of complexity as they progress through the course sequence. *Laboratory three hours per week. Prerequisite: P3 standing*

#### **PHRD 510 Longitudinal Care (1 credit)**

This course is designed to provide experiential opportunities for students to deliver patient care to an ambulatory population and apply didactic knowledge to community health partners to meet the needs of individuals within the community. Additionally, this course will provide students with a “caring” foundational experience as part of the professionalization process that teaches the values and ethics of treating people as humans and individuals. Students will also develop an understanding of patient-specific and psychosocial issues surrounding an individual’s ability to be adherent to health-related instructions in preparation for APPEs. *Patient visit or group discussions three hours per week; Prerequisites: P3 standing*

#### **PHRD 514 Pharmacotherapeutics: Cardiovascular Disorders (4 credits)**

Pharmacotherapeutics (PT) is a 5-semester, team-taught, integrated course sequence combining material from four major content areas: pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this eighth of twelve-modules, students will have the opportunity to learn, integrate and apply concepts from the four content areas in order to provide appropriate pharmaceutical management of cardiovascular disorders. Implications and application across the life span will be incorporated. *Lecture four hours per week. Prerequisite: P3 standing*

#### **PHRD 515 Pharmacotherapeutics: Renal Disorders (2 credits)**

Pharmacotherapeutics (PT) is a team-taught series of courses, combining material from major content areas, including pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this Renal Disorders Pharmacotherapeutics course, students will learn the pathophysiology and management of common renal disorders, such as fluid, electrolyte and acid base balance and acute and chronic kidney disease. Through lectures, utilization of the pharmacist patient care process, and interactive case-based discussions, students will develop proficiency to appropriately manage patient care and medication treatment of common kidney disorders. *Lecture two hours per week. Prerequisite: P3 standing*

**PHRD 516 Pharmacotherapeutic: Endocrine Disorders (2 credits)**

Pharmacotherapeutics (PT) is a 5-semester, team-taught, integrated course sequence combining material from four major content areas: pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this tenth of twelve-modules, students will have the opportunity to learn, integrate and apply concepts from the four content areas in order to provide appropriate pharmaceutical management of endocrine disorders. Implications and application across the life span will be incorporated. *Lecture two hours per week. Prerequisite: P3 standing*

**PHRD 525 Calculations IV: Advanced Clinical Applications (2 credits)**

This course is the fourth part of a four-semester calculations series. This course focuses on calculations used in routine pharmacy practice across various settings. Students will apply foundational calculations skills learned in the calculations series as well as new knowledge of therapeutics to solve problems. Through case-based application, students will be prepared to perform necessary calculations for Advanced Pharmacy Practice Experiences (APPEs) and pharmacy licensure examination. *Lecture two hours per week. Prerequisite: P3 standing*

**PHRD 527 Commonly Used Medications V (1 credit)**

This is the fifth of a six series course designed to develop comprehensive knowledge necessary for pharmacy practice with commonly used medications and their clinical use. This course will explore the relationship between mechanisms of action with a drug's indication, adverse drug reactions (ADRs) and drug-specific warnings and precautions, with a focus on medications commonly used to treat cardiovascular, renal and endocrine conditions and their relevant monitoring laboratory values. Students will also develop study aids to help retain drug knowledge necessary to provide medication education and counseling. At the end of this course, students will have gained a foundational knowledge and study techniques for commonly used medications. *Lecture one hour per week. Prerequisite: PHRD 428 Commonly Used Medications IV*

**PHRD 805 Professional Development & Engagement V (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals, developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism.

*Prerequisite: P3 standing*

### P3 Spring

**PHRD 506 Pharmacist Care Lab VI (1 credit)**

This is the sixth of a six-semester sequence designed to integrate material from the curriculum and introduce selected practice related topics. Students will apply skills learned to specific patient populations and learn specialized counseling and prescribing skills. Emphasis is placed on active learning strategies, case studies, role-plays, and presentations to engage students in the learning process. Students are expected to synthesize information at increasing levels of complexity as they progress through the course sequence. *Prerequisite: P3 standing*

**PHRD 509 Evidence Based Medicine (2 credits)**

This course is designed to build on the knowledge and skills learned in Clinical Research Design and Pharmacist Care Lab-Drug Information for clinical application. Students will learn to interpret the results of clinical trials to appropriately apply to patient population(s) in order to provide evidence for therapeutic recommendations. Through lectures, journal article discussions, and data interpretation, students will demonstrate the effective use of evidence to support therapeutic interventions for a given population, with an emphasis on the use of biostatistics and pharmacoeconomic principles. *Lecture two hours per week. Prerequisite: PHRD 401 Clinical Research Design; P3 Standing;*

**PHRD 518 Pharmacotherapeutics: Central Nervous System Disorders (4 credits)**

Pharmacotherapeutics (PT) is a 5-semester, team-taught, integrated course sequence combining material from four major content areas: pathophysiology, pharmacology, medicinal chemistry, and therapeutics. In this eleventh of twelve-modules, students will have the opportunity to learn, integrate and apply concepts from the four content areas in order to provide appropriate pharmaceutical management of central nervous system disorders. Implications and application across the life span will be incorporated. *Lecture four hours per week. Prerequisite: P3 standing*

**PHRD 519 Advanced Pharmacotherapeutics (4 credits)**

Advanced Pharmacotherapeutics is a team taught, integrated course combining material from four major content areas: pathophysiology, pharmacology, medicinal chemistry, and therapeutics. It is designed to provide students with the opportunity to learn, integrate and apply concepts from the four content areas in order to provide the necessary information for pharmacotherapy management of a variety of disease states. In this course, students will practice applying the necessary skills and knowledge for the pharmacotherapy management of complex patients with multiple disease states in preparation for the Advanced Pharmacy Practice Experiences (APPEs). *Prerequisites: P3 standing; all pharmacotherapeutics courses prior.*

**PHRD 520 Public Health (2 credits)**

This course provides a comprehensive overview of public health with a special focus on the pivotal role pharmacists play in promoting health and preventing disease. Topics covered include the social determinants of health, health care disparities, health promotion theories, and public health policies and laws. Students will explore public health at local, state, national, and global levels, gaining insights into epidemiology, pharmacoepidemiology, pharmacoeconomics, and principles of public health research. Special sessions will highlight the roles of pharmacists in global health, emergency preparedness, and lifestyle medicine. Through lectures, guest presentations, and practical projects, students will learn to integrate public health principles into pharmacy practice, culminating in a final public health campaign presentation. This course equips students with the knowledge and skills to effectively contribute to public health initiatives and address current and future health challenges. *Lecture two hours per week. Prerequisite: P3 standing*

**PHRD 521 Pharmacy Law & Ethics (3 credits)**

This course will focus on the study of state and federal statutes, regulations and court decisions which govern the practice of pharmacy and drug distribution. Civil liability and elements of business and contract law will also be addressed. Ethical issues in pharmacy practice facing health care providers, patients and society will also be discussed. Particular emphasis will be placed on examining the integration of pharmacy law and ethics when making patient care decisions. *Lecture three hours per week. Prerequisite: P3 standing*

**PHRD 528 Commonly Used Medications VI (1 credit)**

This is the sixth and final course of a six series course designed to develop comprehensive knowledge necessary for pharmacy practice with commonly used medications and their clinical use. This course will explore the relationship between mechanisms of action with a drug's indication, adverse drug reactions (ADRs) and drug-specific warnings and precautions for commonly used central nervous system medications. This final course will then provide a comprehensive and advanced review of all medications discussed across the series, focusing primarily on key counseling points and safety concerns. Students will develop study aids to help retain drug knowledge necessary to provide medication education and counseling. At the end of this course and sequence, students will have gained a foundational knowledge and study techniques for commonly used medications. *Lecture one hour per week.*

Prerequisite: PHRD 527 Commonly Used Medications V

**PHRD 806 Professional Development & Engagement (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals, developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism. Prerequisite: P3 standing



P4 Summer, Fall & Spring

**PHRD 700-709 or 760-766 Advanced Pharmacy Practice Experiences (APPE)**

*Students must successfully complete all didactic coursework and IPPE prior to participation in APPE. The duration of each APPE is six weeks for the first block of APPE (PHRD 760-766) and 5 weeks for the rest.*

**PHRD 700/760 Ambulatory Care (5/6 credits)**

This rotation is a structured, full-time, 5-week patient care experience in ambulatory care. It is designed to provide the student with the opportunity to develop and refine the skills necessary to deliver pharmaceutical care, with an emphasis on rational drug therapy and outcomes, to an ambulatory care patient population. Students will have the opportunity to apply their didactic knowledge to various therapeutic issues and disease states encountered in clinical practice.

Emphasis will be placed on problem-solving, critical thinking, and basic clinical skills such as patient counseling, obtaining medication histories, drug information retrieval and evaluation, and drug therapy monitoring. Interaction and communication with other health care professionals for the promotion of optimal drug therapy are stressed to help the student develop a sound professional approach to the practice of pharmacy. In addition, students are encouraged to broaden their existing competencies and incorporate their professional and personal goals into this rotation.

Prerequisites: completion of all P1-P3 coursework

#### **PHRD 701/761 Acute Care General Medicine (5/6 credits)**

This rotation is a structured, full-time 5-week patient care experience in adult internal medicine in an institutional acute care setting. It is designed to provide the student with the opportunity to develop and refine the skills necessary to deliver pharmaceutical care, with an emphasis on rational drug therapy and patient outcomes, to an inpatient population. This will be accomplished by participation in the daily activities of work rounds with the internal medicine team and through consultation with other health care providers involved in the care of patients. Students will have the opportunity to apply their didactic knowledge to various therapeutic issues and disease states encountered in clinical practice. Interaction and communication with other health care professionals for the promotion of optimal drug therapy are stressed to help the student develop a sound professional approach to the practice of pharmacy. In addition, students are encouraged to broaden their existing competencies and incorporate their professional and personal goals into this rotation. Prerequisites: completion of all P1-P3 coursework

#### **PHRD 702/762 Advanced Health Systems Pharmacy Practice (5/6 credits)**

This rotation is a structured, full-time, 5 –week pharmacy practice experience in health-system pharmacy. It is designed to provide the student with the opportunity to develop understanding and competence within all aspects of health-system pharmacy. The students will accomplish this through participation in a hospital pharmacy department which provides a variety of services that may include, but not limited to, medication reconciliation, therapeutic pathways, antibiotic surveillance, patient counseling, pharmacokinetic monitoring, parenteral nutrition consults, and interdisciplinary educational sessions. The student will also gain experience in managing the procurement, ordering, dispensing, monitoring, and administration of medication products. Students will also have the opportunity to learn administrative skills through activities such as management of technical staff and supportive personnel, compliance with relevant laws and standards, financial analysis, and health-system policy and procedures. In addition, students are encouraged to broaden their existing competencies and incorporate their professional and personal goals into this rotation. Prerequisites: completion of all P1-P3 coursework

#### **PHRD 703/763 Advanced Community Pharmacy Practice (5/6 credits)**

This rotation is a structured, full-time, 5-week patient care experience in community practice. It is designed to provide the student with the opportunity to develop and refine the skills necessary to deliver pharmaceutical care, with an emphasis on rational drug therapy and outcomes. Students will have the opportunity to apply their didactic knowledge to various therapeutic issues and disease states encountered in clinical practice. Emphasis will be placed on problem-solving, critical thinking, patient counseling, application of clinical skills, and providing medication therapy management services to patients whenever possible. Opportunities for further development in the use of OTC, alternative therapies, and home diagnostic tests and monitoring systems and durable medical equipment will be provided. Issues related to reimbursement by third parties will be discussed. Skill development in the dispensing process, extemporaneous compounding (depending on the site) is an additional facet of the rotation. In addition, students are encouraged to broaden their existing competencies and incorporate their professional and personal goals into this rotation.

Prerequisites: completion of all P1-P3 coursework

**PHRD 704/764, 705/765, 706/766 APPE Elective (5/6 credits each)**

Each elective advanced pharmacy practice experience (APPE) site will provide opportunities for students to develop the advanced pharmacy practice experience program outcomes in areas such as, but not limited to, community, health-system, clinical, industry, and administrative pharmacy practice. These experiences will further develop a student's knowledge and skills in the areas of their practice choice. Interaction with other health care professionals, professionalism, and strong communication skills are strongly emphasized. Students are encouraged to broaden their existing competencies and incorporate their professional and personal goals into these rotations.

Prerequisites: completion of all P1-P3 coursework

**PHRD 708 and 709 Advanced Pharmacy Practice Elective (5 credits each)**

These courses are APPE electives intended to further develop student experiential learning. Each site will provide opportunities for students to develop the advanced pharmacy practice experience program outcomes in areas such as, but not limited to, community, health-system, clinical, industry, and administrative pharmacy practice. These experiences will further develop a student's knowledge and skills in the areas of their practice choice. Interaction with other health care professionals, professionalism, and strong communication skills are strongly emphasized. Students are encouraged to broaden their existing competencies and incorporate their professional and personal goals into these rotations. Prerequisite: Office of Experiential Education permission required

**PHRD 710 NAPLEX Review I (0.5 credit)**

This course provides students with an opportunity to review major concepts and material learned throughout pharmacy school in order to be prepared to take the NAPLEX exam upon graduation and successfully pass on their first attempt.

Prerequisite: P4 Standing

**PHRD 711 NAPLEX Review II (2 credits)**

This course provides students with an opportunity to review major concepts and material learned throughout pharmacy school in order to be prepared to take the NAPLEX exam upon graduation and successfully pass on their first attempt.

Prerequisite: P4 Standing

**PHRD 807 Professional Development & Engagement VII (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals, developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism. Prerequisite: P4 Standing

**PHRD 808 Professional Development & Engagement VIII (0.5 credit)**

The purpose of these required courses is to help students prepare for the profession as they progress through the curriculum, ultimately demonstrating professional growth and achievement of learning outcomes over time. Students will gain skills in setting personal and professional goals,

developing a curriculum vitae, creating an electronic professional profile, and reflecting on their progress toward becoming a competent pharmacist. Students will document their educational experiences with a diverse set of co-curricular activities and provide constructive feedback to instructors and the school to improve their learning experience. Faculty advisors will guide students in the process of developing their portfolio as a means of cultivating student self-awareness, leadership skills, creative thinking and planning, and professionalism. *Prerequisite: P4 Standing*

### **Elective Courses**

*Students need to take a minimum of 6 elective credits over at least 3 separate courses to satisfy graduation requirements. Only 2 credits from research electives count toward the elective requirement.*

#### **PHRD 600 History of Pharmacy and Drug Discovery (2 credits)**

The History of Pharmacy and Drug Discovery is an elective course designed to provide the student with a general understanding of the development of the profession of pharmacy and its interrelationship with the discovery of critical therapeutic agents. This course will consider the contributions of the ancient Mesopotamian, Egyptian, Chinese, Greek and Roman cultures to the development of Pharmacy. The student will also be exposed to events that lead to the rise of professional pharmacy in Europe during the Renaissance period. The course will focus on the development and rise of professional pharmacy within the United States from the 15<sup>th</sup> century to modern times. An important aspect of this course will be discussions concerning the development of critical therapeutic agents that revolutionized the treatment of disease and how these discoveries affected the pharmacy profession. Aspects of the scientific process and how it has contributed to these discoveries will also be discussed.

#### **PHRD 602 Independent Research Elective I (1 credit)**

This course will provide students with an opportunity to develop an appreciation of the scientific method through active participation in a research project. The focus of these discussions will be in the area of pharmaceutical sciences or clinical research, depending upon the expertise of the faculty member. The research project and activities will be decided upon jointly by the faculty member and the student.

#### **PHRD 603 Introduction to Medical Spanish (3 credits)**

Medical Spanish is a course designed to provide students, without prior knowledge of Spanish, functional Spanish language skills that can be used in the pharmacy setting. Emphasis will be placed on developing language skills that facilitate successful patient-pharmacist interactions such as, basic pharmacy terminology regarding the dosage and administration of medications, gathering patient health information, expressing privacy issues and assisting patients with nonprescription needs. Cross-cultural issues and their impact on patient counseling will be discussed.

#### **PHRD 604 Independent Research Elective II (1 credits)**

This course will provide students with an opportunity to develop an appreciation of the scientific method through active participation in a research project. The focus of these discussions will be in the area of pharmaceutical sciences or clinical research, depending upon the expertise of the faculty member. The research project and activities will be decided upon jointly by the faculty member and the student

#### **PHRD 606 Independent Research Elective III (1 credits)**

This course will provide students with an opportunity to develop an appreciation of the scientific method through active participation in a research project. The focus of these discussions will be in the area of pharmaceutical sciences or clinical research, depending upon the expertise of the faculty member. The research project and activities will be decided upon jointly by the faculty member and the student.

**PHRD 609 Tropical Parasitic Diseases (2 credits)**

This course is an overview of the etiology, epidemiology, and medications used against the most common tropical parasitic infections, according to guidelines from the Centers for Disease Control and Prevention (CDC) and World Health Organization (W.H.O.). The course will review the historical developments in medication therapy and the mechanisms of action of those agents used to treat such diseases. The course provides an opportunity for students to understand the global burden of tropical diseases, and the need for awareness by the American pharmacist of their existence and general signs and symptoms. It will explore the research and development of new medications to treat tropical diseases and the concept of neglected diseases.

Prerequisite: P2 standing

**PHRD 610 Pharmaceutical Sciences Research I (1 credits)**

The Pharmaceutical Sciences Research elective is designed to provide students with the opportunity to engage in and learn about the process of scientific investigation. Students will work one-on-one with an investigator on a specific research project, providing them with the opportunity to read, evaluate and discuss primary literature pertinent to a specific research project, learn basic laboratory skills and protocols directed at addressing a specific research hypothesis/question and demonstrate their knowledge of background information about their project, data collected (if applicable) and the analysis of that data in both a written and oral format.

**PHRD 612 Pharmaceutical Sciences Research II (1 credits)**

The Pharmaceutical Sciences Research elective is designed to provide students with the opportunity to engage in and learn about the process of scientific investigation. Students will work one-on-one with an investigator on a specific research project, providing them with the opportunity to read, evaluate and discuss primary literature pertinent to a specific research project, learn basic laboratory skills and protocols directed at addressing a specific research hypothesis/question and demonstrate their knowledge of background information about their project, data collected (if applicable) and the analysis of that data in both a written and oral format.

**PHRD 614 Pharmaceutical Sciences Research III (1 credits)**

The Pharmaceutical Sciences Research elective is designed to provide students with the opportunity to engage in and learn about the process of scientific investigation. Students will work one-on-one with an investigator on a specific research project, providing them with the opportunity to read, evaluate and discuss primary literature pertinent to a specific research project, learn basic laboratory skills and protocols directed at addressing a specific research hypothesis/question and demonstrate their knowledge of background information about their project, data collected (if applicable) and the analysis of that data in both a written and oral format.

**PHRD 615 Advanced Medical Spanish (3 credits)**

This course is designed to provide intermediate to advanced professional Spanish communication skills for the pharmacist. As a continuation of the introductory course it will provide students with more in-depth study of Spanish grammar, while adding more vocabulary related to various health-related themes.

**PHRD 616 Strategies for Academic Success (2 credits)**

This course is a skills-based program for pharmacy students that incorporate instruction in foundational strategies for improving study skills, time management, and test performance.

Prerequisite: Office of the Dean Permission required

**PHRD 622 Advanced Community Pharmacy Services (2 credits)**

This course is designed to be a sequence to PHRD 312 Pharmacy Practice Management, a general pharmacy management course. This course will concentrate specifically on advanced pharmacy services, reimbursement models, and the unique challenges of developing a service and providing patient care in a community pharmacy setting. Students will complete the American Pharmacists Association (APhA) Medication Therapy Management (MTM) Certificate Program and receive a certificate at the end of the course upon successful completion. Successful completion of the certificate program will require a direct patient care component. The course may have guest speakers and include outside class assignments, interviews, and tours of different community pharmacies as well as discussions surrounding reimbursement, practicality and feasibility of services within the workflow of the pharmacy dependent on the type of setting resources

Prerequisite: PHRD 331 Pharmacy Fundamentals I: Professional Identity & 332 Pharmacy Fundamentals II: Operations Management

**PHRD 625 Performance Enhancing Drugs and Supplements (2 credits)**

This course is an overview of concepts involved in sport and exercise medicine. It will focus on the nutritional and pharmacological elements involved in the practice of sports at diverse levels, such as personal fitness, weight-loss, and drug use and abuse at the highly competitive Olympic and professional sports. Students will discuss the integration of sports care into their practice as pharmacists and be encouraged to be proactive in preventing drug abuse and promoting proper use of nutritional supplements. Prerequisite: P2 Standing;

Corequisite: PHRD 423 Calculations III: Biopharmaceutics & Clinical Pharmacokinetics

**PHRD 626 Fundamentals of Financial Management (3 credits)**

This elective course is one of six courses needed to fulfill requirements for the certificate in entrepreneurship program in the School of Pharmacy. The course will introduce students to foundational concepts in accounting and finance, while providing an opportunity to engage with financial tools useful in investment and financial decision making. Concepts of venture capital and approaches to obtaining financial support for a new initiative, with a particular emphasis on healthcare, will be covered. Prerequisite: P2 standing

**PHRD 627 Entrepreneurship: The Lean Start-Up (3 credits)**

This course provides students with a fundamental understanding of the Lean Start-Up methodology in entrepreneurship as it relates to pharmacy practices in community, hospital and other practice settings; as well as any start-up business or service program. The course is a mandatory component to earn a certificate in the Lean Start-Up Entrepreneurship Program. It will be based on the foundational areas of identification and characteristics of entrepreneurs as described in Gerber's *The E Myth*. Comparisons between the typical business plan and the LEAN method, key factors of the healthcare landscape that influence potential workplace and health care delivery, using the LEAN Start-up for "intrapreneurship" within an organization, the customer discovery process, the Business Model Canvas concept, and evaluating a business opportunity and its feasibility or impracticality will be made. Combined with the financial foundation elective, this course will provide the necessary components in any start-up business.

**PHRD 629 Introduction to Psychiatric Pharmacotherapy (2 credits)**

This elective covers select psychiatric disorders per Diagnostic and Statistical Manual of Mental Disorders (DSM-5), which are not taught in PHRD 518 Pharmacotherapeutics XII: Central Nervous System Disorders. This will include reviewing the DSM-5 diagnostic criteria, clinical presentation, prognosis, and potential treatment options (e.g. which group of medications have been studied, types of non-pharmacologic therapy). This course will provide an opportunity for students to learn about the behavioral, psychosocial, cultural, and legal factors that affect care for this patient population. *Prerequisite: P2 standing*

#### **PHRD 630 Preparation for Postgraduate Training (1 credit)**

This course is intended for students who have decided to pursue postgraduate training upon graduation and will help students prepare for the application process that will occur during the 4<sup>th</sup> year. Additionally, students will create an application portfolio that can be used in the 4<sup>th</sup> year.

*Prerequisite: P3 Standing and faculty approval*

#### **PHRD 631 Pharmaceutical Sciences Research IV (1-3 credits)**

The Pharmaceutical Sciences Research elective is designed to provide students with the opportunity to engage in and learn about the process of scientific investigation. Students will work one-on-one with an investigator on a specific research project, providing them with the opportunity to read, evaluate and discuss primary literature pertinent to a specific research project, learn basic laboratory skills and protocols directed at addressing a specific research hypothesis/question and demonstrate their knowledge of background information about their project, data collected (if applicable) and the analysis of that data in both a written and oral format.

#### **PHRD 633 Nanomedicine & Nanotechnology (2 credits)**

Nanomedicine, defined by the integration of nanotechnology and medicine, is emerging as the new frontier in the world of modern medicine. This course will introduce the basic concepts in nanotechnology and the challenges and opportunities in multidisciplinary approach in the education, training, and research in nanomedicine. It will then discuss the details of various common nanotechnologies used in the research of treatment and diagnosis of human diseases, such as nanocarriers, bio-targeting agents, and molecular recognition elements, etc. Specific conditions, such as cancers and infectious diseases, commonly involved in nanomedicine research, will also be discussed in greater detail. *Prerequisite: P2 Standing*

#### **PHRD 635 Review of Topics in Pharmacy Curriculum (1 credit)**

The purpose of this course is to provide students on academic probation an opportunity to maintain and improve prior knowledge and skills from prior coursework in the pharmacy curriculum during a bridge semester or year while on an extended-track program. The focus of this course is for students to self-assess their academic performance in the program, determine the areas of improvement, and assess deficits in areas of knowledge and skills. The goal of this course is to improve on those deficit areas using academic-success guidance, self-study methods, and supplemental study guides. *Prerequisite: Office of the Dean approval required*

#### **PHRD 636 Self-Discovery and Wellness (1 credit)**

This course is designed to help students discover and articulate their state of wellness, roles and responsibilities, relationships with others, goals and ambitions, and hidden potentials for both personal and professional journeys. Students will learn how to objectively assess, reflect, share, and write about a variety of topics affecting their wellness and performance. Students will discover their strengths and areas of improvement within the context of their roles and responsibilities, learn to manage internal and external stresses and develop strategies to balance personal and professional goals.

**PHRD 637 Simulation-Based Experimental Pharmacology (2 credit)**

This course will explore experimental pharmacology procedures through the lens of computer-assisted learning. The course is aimed to provide hands-on experience and instruction in simulating animal experiments using "Experimental Pharmacology Series Software" which comprises of interactive digital tools, such as simulations, virtual experiments, and computerized quizzes. Examples include simulating the effects of drugs on different biological systems, allowing students to explore the mechanisms of action of different drugs in a safe and controlled biological systems, allowing students to explore the mechanisms of action of different drugs in a safe and controlled environment. It can also be used to teach practical skills, such as how to administer drugs to animals and how to collect and analyze pharmacological data. Overall, by the end of this course, students gain a better understanding of pharmacological concepts, principles, experimental procedures, applications and data analysis. *Prerequisite: P2 standing*

**PHRD 639 Drug Design and Discovery (2 credit)**

Drug Design and Discovery is an elective course designed to provide the student with a foundational understanding of the design and discovery of critical therapeutic agents. This course will focus on computer-based drug-receptor interactions and use the computational tools to design better drugs for the targets. In this course, the students will also be trained in the computer-based design of therapeutic agents for druggable receptors, and optimization of the basic pharmacokinetic and pharmacodynamic properties such as absorption, distribution, metabolism, and excretion (ADME), to declare lead molecules. *Prerequisite: P2 standing*

**PHRD 640 Interprofessional Collaboration to Improve Medication Safety (1 credit)**

This course provides students the opportunity to explore topics related to safe, timely, efficient, effective, and patient-centered medication-use systems. Through an interprofessional context, students will explore medication safety issues as they relate to the health care system, evidence-based practice, quality and performance improvement, health information technologies, and, ultimately, health equity. Students will use an interprofessional framework to examine and apply systems thinking, human factors engineering principles, and high-reliability principles to medication safety problems. By sharing experiences with other professions, students will learn to better communicate and make team-based decisions for optimal patient care and medication safety. *Prerequisite: P2 or P3 standing*

### CO-CURRICULAR REQUIREMENTS

To maximize opportunities for application of concepts, skills, and knowledge learned in the didactic component of the curriculum and to integrate professional values and behaviors, all NDMU SOP student pharmacists from P1 through P3 are required to engage in and complete co-curricular experiences. The co-curricular activities should reflect the learning outcome listed below in Appendix A to promote academic and professional development. Students are encouraged to select co-curricular experiences that align with their professional goals and interests, in addition to choosing co-curricular experiences that meet all the SOP learning outcomes. Co-curricular opportunities will be provided by the SOP to meet this requirement; however, students may identify or create opportunities for earning co-curricular experiences outside of what the SOP recommends. All the opportunities or experiences must meet the co-curricular guidelines and requirements set by the School of Pharmacy.

- As a requirement for graduation, each student must complete required co-curricular hours each semester that are not associated with a course by which course credit is earned.

- Each student must complete three separate co-curricular activities per semester for six semesters by the end of P3 year. All 18 co-curricular activities **MUST** be complete by the end of *P3 Spring to begin P4 APPEs*.
- Students may also be **required** to attend select co-curricular activities (e.g., Legislative Day).

Service Learning via AdvoCaring:

- As a graduation requirement, each student must complete 5 AdvoCaring hours per semester for five semesters (P1 Spring through P3 Spring), before the end of P3 year, for a total of 25 hours in order to graduate.

For additional information regarding specific co-curricular requirements, please refer to the SOP website.

### **INTERPROFESSIONAL EDUCATION REQUIREMENTS**

Learning to effectively engage and communicate with other health disciplines, as well as distinguishing one's professional role in the healthcare team, is important in providing comprehensive patient care. Student pharmacists learn these principles through interprofessional education activities and simulations within several courses and extra-scheduled activities throughout the program. *Each student must successfully complete all interprofessional education requirements of the doctor of pharmacy program to graduate.*



### **JOINT/ACCELERATED PROGRAMS**

**Joint Program: PharmD/MBA in Healthcare Management, PharmD/MS in Healthcare Data Analytics, PharmD/MS in Clinical Leadership**

NDMU pharmacy students can enroll in the joint program with Clarkson University David D. Reh School of Business, beginning in the second semester of third (P3) year, if they meet Clarkson University's admission requirement. Students will be full-time at NDMU and part-time at Clarkson University and must complete 16 courses totaling 48 credits for the Master's degree.

**2+4 Pharmacy Pathway: Bachelor of Arts in Liberal Arts with a focus on Pharmaceutical Sciences & Doctor of Pharmacy**

The 2+4 pharmacy degree track pathway aims to provide NDMU undergraduate students an accelerated route to obtain a Doctor of Pharmacy Degree within a minimum of 6 years. This program expedites the academic journey for an undergraduate student who plans to pursue a Doctor of Pharmacy degree after successfully completing their undergraduate coursework for a minimum of two years for a Bachelor of Arts in Liberal Arts with a focus on Pharmaceutical Science. Typically, students aspiring to enter the School of Pharmacy must complete 56 credit hours of NDMU coursework before matriculating into the Doctor of Pharmacy Program. The prerequisites are integrated into the first two years of the 2+4 Pharmacy Pathway, and high school students may transfer relevant college credits to fulfill these requirements for matriculating as an undergraduate student. Completion of pre-calculus before program matriculation is strongly recommended.

*Course Semester Credit Hour Requirement NDMU Equivalent Course*

| Course                     | Semester Credit Hour Requirement | NDMU Equivalent Course |
|----------------------------|----------------------------------|------------------------|
| English                    | 6                                | ENG 101 and ENG 410    |
| Speech/Public Speaking     | 3                                | COM 206                |
| Calculus with Lab          | 4                                | MAT 211                |
| Statistics                 | 3                                | MAT 215                |
| General Chemistry with Lab | 8                                | CHEM 110 and 111       |
| Organic Chemistry with Lab | 8                                | CHEM 210 and 211       |
| General Biology with Lab 8 | 8                                | BIO 111 and 230        |
| Microbiology with Lab      | 4                                | BIO 253                |
| Anatomy and Physiology     | 8                                | BIO 201 and 202        |
| Physics with Lab           | 4                                | PHY 101                |

*Schedule of Courses for Pre-pharmacy Component of 2+4 Pathway*

Incoming first-year undergraduate students interested in the pharmacy program are advised to declare themselves as Liberal Arts majors with a focus on Pharmaceutical Science in the 2+4 pre-pharmacy pathway. The following is a suggested sequence of courses for the first two years to facilitate the completion of all pharmacy prerequisite courses.

| Year 1: Fall     |             |
|------------------|-------------|
| Course           | Credit Hour |
| BIO 111 With Lab | 4           |
| CHM 110 With Lab | 4           |
| MAT 211 With Lab | 3           |
| Eng 101          | 3           |
| NDMU 100         | 3           |
| Year 1: Spring   |             |
| Course           | Credit Hour |

|                            |                    |
|----------------------------|--------------------|
| BIO 230 With Lab           | 4                  |
| CHEM 111 With Lab          | 4                  |
| Com 206                    | 3                  |
| Eng 412                    | 3                  |
| Mat 215                    | 3                  |
| <b>Year 2: Fall</b>        |                    |
| <b>Course</b>              | <b>Credit Hour</b> |
| BIO 201 With Lab           | 4                  |
| CHM 210 With Lab           | 4                  |
| PHY 101 With Lab           | 4                  |
| General Education Elective | 3                  |
| General Education Elective | 3                  |
| <b>Year 2: Spring</b>      |                    |
| <b>Course</b>              | <b>Credit Hour</b> |
| BIO 202 With Lab           | 4                  |
| CHM 211 With Lab           | 4                  |
| BIO 253 With Lab           | 4                  |
| General Education Elective | 3                  |
| General Education Elective | 3                  |

### *Admissions Process and Requirements*

Pre-pharmacy students in the 2+4 pathway initiate the admissions process into the professional degree program in the fall of year 2 by registering with PharmCAS, the national admissions portal for pharmacy schools. NDMU covers the \$175 cost of PharmCAS registration.

Admissions requirements into the professional degree program through the 2+4 pathway mirror those for students applying from outside the University. Recommended requirements include earning a grade of C or better in each prerequisite course, achieving a cumulative and science GPA of 2.50 or better, and successfully completing the School of Pharmacy on-campus interview process. Please see above the requirements for admission into the Doctor of Pharmacy program.

### *Advising*

Students in the 2+4 pathway are assigned academic advisors from the School of Pharmacy, assisting students with successful and timely completion of the 2+4 pre-pharmacy requirements. The School of Pharmacy advisor may facilitate experiences to orient pre-pharmacy students to the profession, such as clinical shadowing opportunities, research opportunities, classroom and laboratory visitations, and co-curricular experiences with pharmacy students.

### *Academic Support*

Due to the demanding nature of both the pre-pharmacy and professional degree program components of the 2+4 pathway, students are provided access to the School of Pharmacy's academic support infrastructure. This includes academic coaching by the Associate Dean for Student Affairs and Student Academic Success and School of Pharmacy peer tutors. These resources

help students develop robust learning skills essential for success in the professional degree curriculum.

#### *Financial Aid*

Based on practices at other institutions with similar programs, financial aid and scholarships that are granted to students upon entry into the 2+4 Pre-pharmacy pathway will remain in place until the completion of the P-2 year of the professional degree program at the School of Pharmacy. Students will receive institutional aid for four years as undergraduates until year 3 of the professional pharmacy program based on the current course schedule and school curriculum. After that time students could receive graduate level financial aid if eligible.



## **ACADEMIC POLICIES**

### **Grades**

The following grade scale will be used in the School:

| <b>Course<br/>Grade Scale</b> | <b>Course<br/>Grade</b> | <b>Corresponding<br/>Grade Points</b> |
|-------------------------------|-------------------------|---------------------------------------|
| 93 - 100                      | A                       | 4.0                                   |
| 87 - 92                       | B+                      | 3.5                                   |
| 80 - 86                       | B                       | 3.0                                   |
| 75 - 79                       | C+                      | 2.5                                   |
| 70 - 74                       | C                       | 2.0                                   |
| ≤ 69, Fail                    | F*                      | 0                                     |
| Pass                          | P*                      | 0                                     |
|                               | W**                     | 0                                     |
|                               | I***                    | 0                                     |

*A "P" grade for a course is not computed in the student's grade point average, but the credits earned are counted as credits toward graduation.*

*A "F" grade for a course is included in a student's grade point average.*

*\*\*W = Withdrawal with written official permission of the faculty by the stated University deadline. After when the drop/add periods are over, students can only withdraw for medical reasons, supported by written documentation from a physician or other extremely serious circumstances as determined by the dean of the School of Pharmacy in consultation with the course instructor. Students who do not officially withdraw from a course and stops attending class will receive a grade of F.*

*\*\*\*I = Incomplete grade is granted only for reasons clearly beyond the student's control and under the following circumstances: a) a serious illness or emergency is preventing the student from completing the work for the course; b) the student must submit all required work to the course instructor by the instructor stipulated deadline or no later than the third week of the following semester. No extensions will be granted. Failure to submit the required work will result in an automatic F grade. The final determination of the I grade is the responsibility of the course instructor.*

## **Grade Point Average**

Multiplication of the credits for a course by the numeric value for the grade awarded gives the number of quality points earned for a course. Dividing the total number of quality points earned in courses by the total number of credits in these courses gives the grade point average. Transfer credits are not including in the calculation of the grade point average.

Advanced Pharmacy Practice Rotations do not count toward grade point average.

## **Repeating a Course**

A student must repeat any required course that s/he fails. A course may be repeated only once. Only the higher grade will be counted in the student's cumulative GPA, and only the credits for the most recent attempt for the course will be counted toward the credits needed for graduation. However, both grades will appear on the student's official transcript. The repeated course must be taken at Notre Dame.

## **Transfer Credits**

Matriculated students in the School of Pharmacy may transfer credit(s) for course(s) approved by the SOP Curriculum Committee that satisfy elective course requirements. A minimum grade of 'C' (not C minus) must be earned to receive credit at Notre Dame of Maryland University.

## **Dean's List**

Following each semester, the School recognizes students for the Dean's List who have distinguished themselves by achieving a GPA of 3.50 or better for the semester. This applies to full-time didactic coursework only. Only students currently taking a normal academic course load are eligible for the Dean's List. Students who are on academic or disciplinary probation and/or an academic improvement contract are not eligible for the Dean's List.

## **Academic Progression**

A student must maintain an annual grade point average of 2.00 in the professional program to be considered in good academic standing. Grades earned for courses taken at another institution while the student is enrolled in the School of Pharmacy is not included in the calculation of the annual GPA. A student will be placed on academic probation for any one of the following reasons:

- A student earns an annual grade point average below 2.00 at the end of any semester
- A student earns a grade of F in one or more courses within an academic year.

Academic probation represents notice that continued inadequate academic performance may result in dismissal from the School. At the completion of each academic semester, the student promotion committee will meet to review students' academic progress and performance in relation to School academic policies. Students who are placed on academic probation may be placed on an academic improvement contract in which the student must repeat all courses in which a grade of F was earned (courses in which a student receives a grade of C or higher cannot be repeated). In addition, students may be required to take a course to improve their strategies for academic success, which must be approved by the Office of the Dean prior to registration. This will usually result in extension of the time needed to complete the program. Students are allowed to be placed on an academic improvement contract only once and/or repeat a course(s) only once. Placement of a student on an academic improvement contract does not modify or limit the Committee's action for dismissal. Thus, a student may be dismissed for academic reasons while on an academic improvement contract. To be returned to good academic standing, while on an academic improvement contract, the student must earn an annual grade point average of 2.00 or above and complete any additional requirements as stated in their letter of probation. A re-entering student (one who is no longer on probation) who earns a grade of F in any course in an academic year or an annual grade point average of less than 2.00 may be dismissed from the School.

To achieve the status of a second-year student (P2), students must have successfully completed all requisite first year courses and earned an annual didactic GPA of 2.00. To achieve the status of a third-year student (P3), students must have successfully completed all requisite second year courses and earned an annual didactic GPA of 2.00. To achieve the status of a fourth-year student (P4), students must have successfully completed all requisite third year courses and earned an annual didactic GPA of 2.00.

### **Academic Progression and Standards for Pharmacy Practice Experiences**

To proceed to Pharmacy Practice Experiences, a student must have earned a passing grade in all didactic courses with an annual didactic grade point average of  $\geq 2.00$  and have P2, P3 or P4 standing. Eligibility for Introductory Pharmacy Practice Experiences I and II (P2 year) is determined by the P1 annual didactic grade point average. Eligibility for Longitudinal Care (P3) is determined by the P2 annual didactic grade point average and successful completion of Introductory Practice Experiences I and II. Eligibility for Advanced Pharmacy Practice Experiences (P4) is determined by the P3 annual didactic grade point average and successful completion of Introductory Pharmacy Practice Experiences I and II, and Longitudinal Care.

Introductory Pharmacy Practice Experiences (IPPE) I & II and Advanced Pharmacy Practice Experiences are graded on a P/F scale. Students must earn a grade of P on advanced pharmacy practice experiences (APPE). If a student fails to earn a grade of P, the student promotion committee will require the student to re-take a rotation with additional requirements which may include, but not limited to any one or combination of, completing additional coursework to correct knowledge deficiencies, undergo a period of directed independent study to correct knowledge deficiencies or wait a defined period before repeating a rotation. The time of the re-take will be as early as possible once the student satisfies the Committee's requirements and is subject to availability of sites as determined by the office of experiential education. The retake, if granted, must be repeated within 12 calendar months of the receipt of the Committee's decision by the student. Students are only allowed one retake of Introductory Pharmacy Practice Experience and

one retake of Advanced Pharmacy Practice Experience. Failure to earn a grade of P or better on a repeat rotation will result in a recommendation for dismissal. Students must achieve a grade of P in all advanced pharmacy practice experiences.

## **Remediation Policy**

School of Pharmacy faculty affirm the importance of using programmatic and in-course remedial interventions to provide students with the opportunity to improve and demonstrate their competency of course content such that the students may progress through the curriculum. For the remediation process and outcome to be successful, students are expected to proactively seek help, utilize all available resources, take responsibility for their learning, and fully commit to successfully completing the remediation.

### **1. Remediation Activities**

- a. Within-Course Remedial Interventions are administered during the course to improve student's knowledge, skills, or application of course material, to avoid a course failure. All students are eligible for and required to complete within-course remedial interventions. Students that are identified as being at risk of earning an "F" grade in a course will be required to participate in the interventions as communicated by the course coordinator(s).
- b. End-of-Course Remediation: An opportunity for end-of-course remediation will be provided to any student who is at risk of earning an F grade in a course if they meet the criteria below and approved by the Student Promotion and Graduation Committee. As part of the Committee's decision-making process, the course coordinator will be asked to provide a recommendation as to the student's eligibility.
  - Failure to demonstrate competency in any assessment or assignment deemed critical for successfully completing or passing the course
  - Participation in and completion of within-course remedial interventions
  - Completion of all assigned work within the course
  - Earning a pending final grade of an F
- c. Limits to eligibility: Students may not be allowed to take an end-of-course remediation in situations including but not limited to:
  - Failure to complete within-course remedial interventions
  - Attempting to use end-of-course remediation when course failure is due to academic dishonesty
  - Student conduct violation
  - Violation of any other University or School codes, regulations, or policies
- d. Individual Action Plan (IAP) is developed for a student who is under consideration for end-of-course remediation as determined by the course coordinator(s). The IAP addresses and incorporates documented student deficiencies so that the student can successfully remediate the course and progress. IAP is developed by course faculty and approved by the Student Promotion and Graduation Committee.

### **2. Remediation Outcomes**

- a. Students who successfully complete end-of-course remediation will have a grade of C submitted to the Registrar and recorded on the transcript.

- b. Students who fail end-of-course remediation will have a grade of F submitted to the Registrar and recorded on the transcript. Students will repeat the course as per their progression policies.

### **Health Standards for Pharmacy Practice Experiences and/or Co-Curricular Activities**

All student pharmacists are required to receive an annual influenza vaccination. Prior to participation in any pharmacy practice experience or co-curricular activity, it is the responsibility of the student to provide documentation of vaccination to the Office of the Dean by the deadline indicated. Students are required to comply with all physical and immunization standards as stipulated by the Office of Experiential Education.

### **Final Course Grade and Student Promotion & Graduation Committee Actions Appeal Policy**

#### **I. Appeal of Final Course Grades**

It is the right and responsibility of the faculty to determine student grades. Only upon clear and convincing evidence presented by the student will a final course grade appeal be granted. Only final course grades can be appealed. Individual assignment grades (exams, quizzes, projects etc.) should be discussed with the instructor throughout the semester.

Prior to entering a formal appeals process, a student who questions a final course grade should discuss the issue with the course instructor. If the matter is unresolved after this discussion, the student may appeal the grade to the instructor. If the instructor denies the appeal, the student can appeal to the department chair. If the matter remains unresolved, the student can appeal to the student promotion committee. Should the course instructor be the Department chair, the appeal will go directly to the student promotion & graduation committee. A final appeal can be made to the dean if the matter remains unresolved after it has been addressed by the student promotion & graduation committee.

Grade appeals will only be granted if the student presents clear and convincing evidence of one or more of the following:

1. Procedural or clerical error in calculating the final grade.
2. Bias on the part of the instructor that had a negative impact on the student's grade.
3. The grade was not given in accordance with the provision set forth in the course syllabus or in the announced course modifications or descriptions for particular projects and assignments.

#### **Final Course Grade Appeal Procedure**

1. The student must first attempt to resolve the issue with the course instructor / coordinator.
2. A student seeking a formal appeal is advised to seek guidance from the associate dean for academics and continuous quality improvement. The principle of seeking a reasonable, fair and speedy resolution prevails throughout the process.
3. All formal appeals must be submitted in writing electronically or by hard copy to the appropriate individual (instructor/coordinator, department chair, chair of the student promotion committee, Dean). It is the student's responsibility to assure the receipt of the

appeal by the appropriate individuals. If the instructor/coordinator is no longer employed by the School, the student must submit the appeal to the department chair.

4. If the student formally appeals the final course grade, s/he must submit a written appeal, to include rationale/justification for the appeal, to the course instructor/course coordinator within 4 business days from the last date of final exams as provided by the registrar's office.
5. The instructor should notify the student upon receipt of the appeal, but the student is responsible for assuring receipt of the appeal. If the instructor cannot be contacted, the student should notify the department chair of his/her appeal and request assistance for contacting the instructor.
6. The instructor will e-mail a written decision to the student within 3 business days of receiving the appeal. If an instructor fails to provide a decision within 3 business days, the student should notify the department chair to intervene in obtaining the decision or furthering the appeal.
7. After receiving the instructor's decision, the student has 3 business days to appeal the final grade, in writing, to the department chair. It is the student's responsibility to provide evidence to support the appeal. The chair will investigate the appeal. The investigation will include discussing the matter with the instructor, requesting the instructor to support the accuracy and fairness of his/her grading and/or any information that is relevant to the appeal.
8. The department chair has 3 business days from the date of receiving the appeal to render a decision and provide a written decision to all parties.
9. If the chair's decision is to deny the appeal, the student has 3 business days to appeal the grade, in writing, to the Student promotion committee. The Committee will provide a written decision to all parties.
10. If the Committee's decision is to deny the appeal, the student has 3 business days to appeal, in writing, to the dean. The dean will provide a final decision to all parties within 3 business days of receiving the appeal.
11. At any step of the appeals process, the student may be asked to meet with the individual or Committee involved in the determining the resolution of the appeal or the student can request to speak with the instructor/coordinator, department chair, student promotion committee or the dean at the appropriate point in the process.

## **II. Appeal of Probation, Academic Improvement Contract Actions**

Following notification of a decision for placement on an academic improvement contract, a student may appeal, in writing, the decision within three business days to the dean. It is the responsibility of the student to assure receipt of the appeal. The dean makes the final decision on all appeals. The dean may grant an appeal only if a student can demonstrate one of the following: 1) material information not available to the Committee at the time of its initial decision; 2) procedural error; 3) bias of one or Committee members. Following receipt of the appeal, the dean will provide a decision to all parties within 3 business days.

## **III. Appeal of Academic Dismissal Actions**

Following notification of a decision for dismissal, a student may appeal, in writing, the decision within three business days to the dean. The dean may grant an appeal only if a student can demonstrate one of the following: 1) material information not available to the Committee at the time of its initial decision; 2) procedural error; 3) bias of one or Committee members. The dean makes the final decision on all appeals within the School of

Pharmacy. A student that has been dismissed from the School of Pharmacy may request to remain at the University to pursue another major. Whether a student will be accepted into another University program is determined by that program director.

**Note:** *Generally, all timelines for appeals are to be adhered to. However, at the discretion of the School, timelines may be extended if necessary evidence or individuals are not available.*

### **Graduation Requirements**

To qualify for graduation, a student must have satisfied the following requirements:

1. Successfully completed a minimum semester credit hours of prerequisite courses, as stipulated, for full admission to the School;
2. Successfully completed the program of professional and experiential coursework approved by the School of Pharmacy;
3. Achieved a cumulative didactic grade point average of 2.00 or greater for all requisite professional coursework;
4. Achieved a cumulative grade point average of 2.00 or greater for all advanced pharmacy practice experiences;
5. Achieved a passing grade for all introductory pharmacy practice experiences;
6. Repeated, upon approval, and earned a passing grade for any required professional courses for which a grade of F was issued;
7. Successfully completed, at a minimum, the last 4 didactic semesters and all pharmacy practice experiences at the School of Pharmacy;
8. Successfully completed a minimum of 6 credit hours over three elective courses. At least one of the courses must not be a research elective;
9. Successfully completed all co-curricular, AdvoCaring, and e-portfolio requirements;
10. Successfully completed all interprofessional education (IPE) experience requirements approved by the School of Pharmacy;
10. Been recommended for the degree by a majority vote of the Student Promotion & Graduation Committee;
11. Settled all financial accounts with the University; and
12. Completed all graduation clearance requirements as instructed by the School and Office of the Registrar.

### **Graduation Honors**

Graduation honors are awarded to candidates for the Doctor of Pharmacy degree who have distinguished themselves by virtue of high academic achievement while enrolled in the professional program of the School. Only grades for didactic courses taken at the School will be included for determining graduation honors. Degrees with distinction are awarded based on the level of academic achievement as follows:

| <b>Didactic Course Grade Point Average</b> | <b>Graduation Honor</b> |
|--------------------------------------------|-------------------------|
| $\geq 3.90$                                | Summa Cum Laude         |
| 3.75 - 3.89                                | Magna Cum Laude         |
| 3.50 - 3.74                                | Cum Laude               |

### **Graduation Awards**

*Award availability is dependent on funding and may vary each year.*

**Clinical & Administrative Sciences Experiential Excellence Award**

This award is presented to the student who demonstrates outstanding professionalism during the APPE year, as determined by their preceptors.

**Dean's Advisory Council Award**

This award is presented to a student whose service to the School and community goes above and beyond what is required in the program. The student demonstrates a willingness to take initiative and a commitment to supporting the School beyond graduation. The student has enhanced student life in the SOP, and exhibits a high degree of integrity.

**Excellence in Acute Care Practice Award**

This award is presented to a student who demonstrates excellence in acute care practice.

**Excellence in Community Practice Award**

The Excellence in Community Pharmacy award is presented to a student who has demonstrated excellence in community pharmacy practice based on letters of Commendation, faculty input, and a student plan postgraduation to work in community pharmacy.

**Excellence in Pharmaceutical Sciences Award**

This award is presented to the student who achieves the highest GPA in all pharmaceutical sciences components of the curriculum.

**Excellence in Clinical Communication Award**

Sponsored by Facts & Comparisons & Lexicomp, leading brands of Wolters Kluwer Health. The recipient of this award must be in the top 25% of the graduating class and have demonstrated superior verbal and written communication skills.

**Excellence in Ambulatory Care Award**

Sponsored by Eli Lilly & company in recognition of demonstrated excellence in ambulatory care practice.

**Maryland Chapter American Society of Consultant Pharmacists-Student Achievement Award (Geriatrics Award)**

This award is given to a student who has exhibited exemplary leadership, care, and service to older adults throughout his/her education at Notre Dame via research, practice, and community engagement.

**MPhA Outstanding Student Pharmacist Achievement Award**

This award recognizes a student, a resident of Maryland, who is in good standing of MPhA and have served on an MPhA Committee, demonstrated academic achievement with a minimum cumulative GPA of 3.0, demonstrated leadership in the community with the potential of having a career in community pharmacy practice.

**MSHP Student Achievement Award**

Scholarship criteria are determined by School of Pharmacy SSHP.

**Pharmacist's Pharmacist Award**

This award is an optional class-sponsored award. Criteria may vary as it is determined by each sponsoring class.

**Phi Lambda Sigma Delta-Beta Chapter Graduate Leadership Award**

This award recognizes a graduating student member who has exemplified leadership qualities in support of the pharmacy profession throughout his/her time in the School of Pharmacy. The recipient must have a proven record of accomplishment of servant leadership in education, community service, professional practice and mentoring.

**Phi Lambda Sigma Graduate Leadership Award**

This award recognizes a member of the graduating class who has exemplified leadership qualities in support of the pharmacy profession throughout his/her time in the School of Pharmacy. The recipient must have a proven record of accomplishment of servant leadership in education, community service, professional practice, and mentoring.

**Professionalism Award**

This award is presented to the student who demonstrates professional behavior, a commitment to the profession of pharmacy through involvement in professional organizations, a high level of service to the profession and community, pride in the profession, understanding of the pharmacist-patient relationship, and the qualities of honesty, ethical behavior, and accountability. The student serves as a role model and has earned a cumulative GPA of at least 3.0.

**Servant Leadership Award**

The recipient of this award is presented to the student who led through service during the entire pharmacy program.

**St. Catherine Medal – Kappa Gamma Pi**

The recipient must represent the high ideals of Catholic education and have demonstrated excellence in leadership and service to the University, School, or community.

**Viatrix Excellence in Pharmacy Award**

This award is given to the student who demonstrates high personal motivation and possesses a unique ability to communicate drug information. The student must be in the top 25% of the graduating class and intend to enter practice upon graduation.



## Professionalism

Professionalism is defined as the active demonstration of the attributes of a professional. These attributes include but are not limited to: commitment to self-improvement of skills and knowledge, pride in the profession, consciousness and trustworthiness, and building relationships with patients, caregivers, and other health care professionals. Professional socialization is the process by which an individual develops the attitudes, values and beliefs of a professional. The goal of professional socialization is to develop professionalism as described below and this process must begin at the beginning of an individual's professional education. Therefore, as consistent with expectations of the practice environment, professional behavior and attitudes are expected for all students enrolled in the School.

Emotional intelligence (EQ) is a set of emotional and social skills that collectively establish how well we perceive and express ourselves, develop and maintain social relationships, cope with challenges, and use emotional information in an effective and meaningful way. It is proven that emotional intelligence accounts for leadership success more than cognitive intelligence. The expected professionalism attributes are linked to emotional intelligence elements below. (EQ-i 2.0)

| Emotional Intelligence Elements per EQ-I 2.0                                                                                                                                                                 | Professionalism Assessment Area                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Self-Actualization</b></p> <p>The ability and tendency to want to grow, to stretch and to strive—to see your full potential, set meaningful goals and work toward your betterment and fulfillment.</p> | <ul style="list-style-type: none"> <li>• <b>Student is self-motivated</b> (is an active learner – seeks knowledge; asks questions, searches for information, takes responsibility for own learning)</li> </ul>                                           |
|                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• <b>Student accepts constructive criticism and modifies behavior if necessary</b></li> </ul>                                                                                                                     |
|                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• <b>Student demonstrates a desire to exceed expectations</b> (goes “above and beyond the call of duty”, attempts to exceed minimal standards and requirements for tasks/assignments/responsibilities)</li> </ul> |
| <p><b>Self-Regard</b></p> <p>The ability and the tendency for you—in light of both your positive and negative qualities—to both like and have confidence in yourself.</p>                                    | <ul style="list-style-type: none"> <li>• <b>Student demonstrates confidence</b> (acts and communicates in a self-assured manner, yet with modesty and humility)</li> </ul>                                                                               |
|                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• <b>Student maintains good hygiene and grooming habits</b> (refer to dress code policy)</li> </ul>                                                                                                               |
| <p><b>Independence</b></p> <p>Your ability and tendency to be self-directed in your thinking, feeling, and actions—to go at it alone when needed.</p>                                                        | <ul style="list-style-type: none"> <li>• <b>Student utilizes time efficiently</b> (allocates and utilizes appropriate amounts of time to fulfill responsibilities; utilizes others' time wisely)</li> </ul>                                              |
|                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• <b>Student is punctual</b> (arrives to class/practice setting and meetings on time, meets deadlines, etc.)</li> </ul>                                                                                           |
|                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• <b>Student takes responsibilities for one's own actions</b> (does not try to blame others for insufficient or untimely work)</li> </ul>                                                                         |

| Emotional Intelligence Elements<br>per EQ-I 2.0                                                                                                                                                                                       | Professionalism Assessment Area                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• <b>Student is reliable, dependable and follows through with responsibilities</b> (can be counted on; if task is left incomplete or problem is left unresolved, student seeks aid)</li> </ul>                       |
| <b>Interpersonal Relationships</b><br>Your ability and tendency to give and receive trust and compassion, and to establish and maintain satisfying personal relationships.                                                            | <ul style="list-style-type: none"> <li>• <b>Student is respectful</b> (demonstrates regard for patients, peers, superiors, other personnel and property)</li> </ul>                                                                                         |
|                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• <b>Student is cooperative</b> (non-argumentative; willing and helpful)</li> </ul>                                                                                                                                  |
|                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• <b>Student displays honesty and integrity in all interactions with patients and other health care professionals</b> (truthful and straightforward; behaves in an ethical manner)</li> </ul>                        |
| <b>Empathy</b><br>Your ability and willingness to take notice of and be sensitive to other people's needs and feelings.                                                                                                               | <ul style="list-style-type: none"> <li>• <b>Student is non-judgmental</b> (demonstrates an attitude of open-mindedness towards others and situations; does not "stereotype" others or prejudge situations)</li> </ul>                                       |
|                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• <b>Student is compassionate and empathetic</b> (demonstrates appreciation of others' positions; attempts to identify with others' perspectives; demonstrates consideration towards patients and others)</li> </ul> |
| <b>Social Responsibility</b><br>Your ability and tendency to cooperate and contribute to the welfare of a larger social system, to have and act in accordance with a social conscience and to show concern for the greater community. | <ul style="list-style-type: none"> <li>• <b>Social awareness and responsibility</b> (takes responsibility for adapting and providing quality patient care to diverse patient populations)</li> </ul>                                                        |
| <b>Impulse Control</b><br>The ability to resist or delay a drive or temptation to do or say something or to decide too quickly or rashly.                                                                                             | <ul style="list-style-type: none"> <li>• <b>Student is diplomatic</b> (fair and tactful in all dealings with patients, superiors, peers, and other personnel; Avoids inappropriate comments and gestures)</li> </ul>                                        |
|                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• <b>Student displays self-control</b> (thinks through thoughts before speaking; control emotional responses)</li> </ul>                                                                                             |
| <b>Stress Tolerance</b><br>Your ability and tendency to live your life effectively in the face of stress.                                                                                                                             | <ul style="list-style-type: none"> <li>• <b>Student appropriately handles stress</b> (remains calm, levelheaded, composed in critical or difficult situations)</li> </ul>                                                                                   |
| <b>Optimism</b><br>Your ability and tendency to look at the brighter side of life and to maintain a positive attitude even in the face of adversity. You are hope and are enabled to see the future as a positive, inviting place.    | <ul style="list-style-type: none"> <li>• <b>Student leads the profession to promote safe medication use and to improve health care; Student maintains professional competence</b> (advocates for the profession; promotes life-long learning)</li> </ul>    |

| Emotional Intelligence Elements<br>per EQ-I 2.0 | Professionalism Assessment Area |
|-------------------------------------------------|---------------------------------|
|                                                 |                                 |

Students who violate any part of the professionalism policy as determined by the session /course instructor will incur a **1.0-point deduction from the final course grade for each occurrence within a course**. Faculty member have the prerogative of including additional penalties. All violations of the professionalism policy that incurs a penalty will also be filed in the Office of the Dean.

In addition, any violations of behavioral standards (as stated in the [School of Pharmacy Handbook](#)) that occur while the student is matriculated in the School of Pharmacy is also a violation of the professionalism policy. Such violations can result in disciplinary action by the School of Pharmacy.

### **School Dress Code for Classes, External Events Sponsored by the School, School Functions and Experiential Education**



All student pharmacists represent the School and the profession's future practitioners. Therefore, your appearance should be that of a professional student. Professional attire is required at all times (8:00 AM – 5:00 PM or later if class ends later). Dress requirements for experiential rotations are delineated in the experiential education manual. The dress code policy is in effect even when participation is via technology. Faculty members and preceptors have the prerogative to require students in their class, lab or rotation to meet stricter dress requirements than those stated in the dress code. As consistent with the expectations of the practice environment, professional dress and attention to personal hygiene are mandatory. The following is considered appropriate professional attire:

- a) Slacks, khakis
- b) Dresses and skirts of appropriate length for a professional: dresses or skirts should reach at least just above the knee when standing. When seated, the dress or skirt should still cover a modest portion of the thighs.
- c) Collared shirt, dress shirts, blouses
- d) Ties may be required with collared shirts for certain situations (e.g., community outreach, IPPE activities, APPE activities)

- e) Clean, well-maintained shoes: closed-toe shoes may be required for certain situations (e.g., lab courses, community outreach, IPPE activities, APPE activities)

NDMU-issued white coats along with professional attire must be worn in all Care Lab courses, community outreach events, and experiential (IPPE and APPE) activities. Students also have the option to wear professional, solid-colored scrubs along with the NDMU-issued white coats on Care Lab days only.

Experiential sites may have additional requirements specific to their sites, such as requirements related to body piercings, tattoos, fingernail maintenance, etc.

At certain times, the school may approve dress-down days. On such days, care shall be taken not to wear clothing that might be deemed inappropriate for a professional. Clothing should be in good condition, not torn or worn out, and adhere to the remaining guidelines below.

The following types of clothing are **not** allowed at any time:

- Hats, caps, or other headgear are not to be worn indoors. Head covers that are required for religious purposes or to honor cultural tradition are permitted.
- Tank tops, tube tops, halter tops, spaghetti string/strap or off-the-shoulder tops that are not covered by a blazer, cardigan, etc.
- Crop tops
- Clothes that are sheer, low-cut, torn, or have holes
- Short shorts, miniskirts
- Pajamas
- Flip flops, slides, shower shoes
- Clothing with obscene or lewd text or pictures, depictions of alcohol, drugs, or other smoking materials

Adequate precautions shall be taken to maintain good personal hygiene. These precautions include regular bathing, use of deodorant, and regular dental hygiene. The use of colognes, perfumes, body sprays, scented body lotions, or aftershave is not recommended due to allergies and sensitivities of other people around. Restraint must be exercised when using these products.

No policy can be all inclusive; it is expected student pharmacists will abide by the spirit of this policy. Violations of the behavioral standards of the University as well as any of the above policies is considered to be a violation of the professionalism policy and sanctions will be enforced.

## **Administrative Policies**

### **Absence Reporting Procedure**

In the event of serious illness, personal emergency, personal incapacitation, or other exceptional problem of a serious nature that causes a student to be absent from a session requiring mandatory attendance or class, a student must notify one of the following in the School of pharmacy: assistant dean for student affairs, School of Pharmacy department chair, or course coordinator. To be excused from a rotation, the student must notify his/her preceptor and the Office of experiential education. Failure to notify the Office of Experiential Education will result in an unexcused absence and policies detailed in the Experiential Education Manual will apply. Assuming that there is a legitimate reason for a student's absence, the School's Office of the Dean will contact by e-mail or

telephone the coordinators of courses in which the student will miss an examination, quiz, or graded assignment, or will send a letter to all appropriate course coordinators that confirms in writing that the student will be absent, the reason for the absence, the courses from which the student will be absent, and the date(s) of the student's absence. This will be done as soon as possible (within 24 hours) after the student has called in. It is the student's responsibility to contact the course coordinator immediately upon his/her return for instructions regarding how the missed session can be made up. If a student fails to follow this procedure, the student is held responsible for the policies stated in course syllabi regarding unexcused absences. Unexcused absences may result in course failure.

### **Absence (Excused) for Personal/Professional Reasons**

The School recognizes that a student may need to be excused from class or rotations for non-illness, nonemergency- related reasons. An Absence Request Form must be completed *as soon possible* prior to the day the student wishes to be excused. Forms are available on the School of Pharmacy Website. Completion of the form by the student does not imply the student is excused from classes until the faculty of the affected courses approves the request.

### **Advanced Standing**

All requests for advanced standing by transfer students (students transferring credits from another accredited school of pharmacy to NDMU SOP) are processed on a course-by course basis by the Office of the Dean. To request such consideration, a student must submit a letter of request and the request form to the Office of the Dean in which the student lists a course(s) previously taken, which might be similar in content to a professional course(s) that he/she is scheduled to take. The student must also provide an official course description(s) and a syllabus (syllabi) of the course(s) previously taken. All requests must be submitted at least 4 weeks prior to the start of the course being considered. Advanced standing will be considered for coursework taken in which a letter grade of C or better has been earned. A C- letter grade is not acceptable for advanced standing consideration. Such course grades are not used in the calculation of the GPA.

### **Accessibility, Accommodation, and Health Promotion**

The University's statement on accessibility, accommodation and health promotion is available on the website (<https://www.ndm.edu/student-life/accessibility/syllabus-accessibility-statement>). Please note for School of Pharmacy Students, the letter stating approval for accommodations must be given to each instructor. An updated letter must be provided at the beginning of each semester to each instructor. Please read the information included in the above link carefully so that you fully understand your responsibility in insuring that you receive the accommodations you may need. The University also recognizes that students who are experiencing temporary medical conditions may also require accommodations. Students who are pregnant, nursing, or those with other temporary medical conditions should also contact the Office of Accessibility and Health Promotion to discuss any accommodations requests.

### **Appropriate Use of Technology in the Classroom**

The School of Pharmacy embraces appropriate technology use as a means to facilitate student learning and recognizes that it is the responsibility of faculty and preceptors to set and enforce expectations regarding the use of technology in their class, laboratory or experiential site. As a general rule, students may use computers, smart phones, and similar devices in the classroom and

on pharmacy practice experiences only if they support teaching and learning activities. Other activities that distract students and prohibit them from fully participating in classroom learning and group work such as accessing social media sites, “surfing” the web, shopping, entertainment, text messaging, e-mailing, gaming and similar off-task behaviors are not permitted. In addition, all electronic devices must be in the “silent mode” and cell phones, pagers, and text messages should not be answered during class time.

Students should be aware that expectations for appropriate technology use can change based on the unique needs of specific teaching and learning experiences and that they should seek clarification from course instructors if there is any confusion. Violation of the School of Pharmacy Classroom Technology Use policy is a violation of the School of Pharmacy professionalism and honor code policies. Ensuring compliance with these policies is ultimately a shared responsibility between students, faculty members, and preceptors.

### **Attendance and Student Employment**

Upon acceptance to the School of Pharmacy, students are expected to devote their entire effort to the academic curriculum. The School actively discourages employment that will conflict with a student's ability to perform successfully while courses/rotations are in session and will not take outside employment or activities into consideration when scheduling classes, examinations, reviews, field trips, individual course, rotation or School functions. Required activities, as well as team project meetings, can be scheduled outside of class time, including weekends, and students are expected to attend these activities/meetings. Class attendance is mandatory for all students during experiential rotations. Refer to student experiential education manual for specific details regarding this policy. Instructors may include additional class attendance policies in course syllabi.

### **Audio Recording in Classrooms**

Notre Dame of Maryland University School of Pharmacy students may use audio recording devices in the classroom for educational purposes only. Students are required to notify faculty that they are audio recording at each class period through the use of their audience response card. Instructor permission is not required when an accommodation notification from Disability Services has been received by the instructor, which identifies a student that requires the use of a recording device. However, an instructor may prohibit the use of any recording device when it would inhibit free discussion and free exchange of ideas in the classroom. Recording or distribution of any type to websites (i.e., social media, file-sharing, etc.) is strictly prohibited. Use of material is restricted to NDMU School of Pharmacy students. Additional restrictions of audio recording may apply for guest speakers.

### **Classroom Food/Drink Policy**

Only drinks in closed containers are allowed in all School of Pharmacy facilities or any room in which School of Pharmacy activities are conducted. Only bottled water is allowed in laboratories. Additional stipulations may be stated in course syllabi or posted in instructional spaces. No food or drink (other than bottled water) is allowed in all the auditoria (e.g., Knott Science Center, LNDL, Le Clerc).

### **Eligibility for Participation in Activities**

Students who are on academic or disciplinary probation or suspension from the School will have restrictions regarding participation in activities during the academic year. In order for students to be academically eligible to attend professional meetings during the academic year, serve as a class officer, student representative on the Curriculum Committee or the Continuous Quality Improvement Committee, or student organization officer, a student must have a **cumulative** professional GPA of 2.5 or greater and no courses in which a student has received a grade of F that has not been repeated. Additionally, the student must be in good disciplinary standing.

### **E-mail Communication**

All students are required to check their University e-mail account on a **daily** basis. Official, "in writing" School communications are sent to students over e-mail. Students are responsible for information that is transmitted through this electronic medium. The student School e-mail account is the only electronic mailing address recognized by the School. The School and its employees are not responsible for forwarding e-mail to students at personal e-mail accounts that are not held by the University. Students are not to send campus-wide e-mails without the prior approval of the dean or the associate dean for student affairs.

### **Faculty Advisor Program**

School of Pharmacy assigns a faculty advisor to students in each entering class. In addition to these faculty advisors, the School of Pharmacy dean, associate dean and assistant dean as well as other faculty members and professional staff, are also available to assist students with academic advising, counseling and enrichment. Students are placed into teams upon entry into the School. Each team of students is assigned a faculty advisor who will mentor them throughout the program. School faculty advisors act as liaisons between the faculty and students. Their responsibilities include:

1. Serving as the student's advisor and academic/professional counselor;
2. Overseeing and monitoring the academic progress and professional growth of the student;
3. Assisting the student in seeking academic and personal counseling services provided by the University;
4. Serving as an advocate for the student; and
5. Counseling the student during his/her selection of a career within the pharmacy profession.



## Guidelines for AI Use at NDMU SOP

In accordance with the NDMU Honor Code and SOP Professionalism Policy, students must adhere to the following guidelines when using any artificial intelligence (AI) applications during their academic career at NDMU SOP.

Students **may not use** AI applications (e.g., ChatGPT) for the following purposes under any circumstances:

- To submit assignments or assessments (e.g., patient cases, reflections, summaries) written by AI
- To submit an original work (e.g., writing, drawing, presentations) generated by AI as your own
- To complete homework or assignments using AI and submit it as your own without disclosing its use
- To provide a reference or evidence from AI without first verifying its accuracy and documenting such (or some language like that)

Students **may use** AI applications when studying for tests or making study guides. However, use them with caution and verify information/output for accuracy. Here are a few examples of when it is permissible to use AI with faculty's approval:

- Translate one language (e.g., English) to another (e.g., Spanish)
- Create a study guide from faculty's notes/slides/resources
- Correct grammar, spelling, or sentence structure of your writing
- Check the accuracy of reference formatting (e.g., AJHP style)
- Refine an already drafted professional e-mail
- Enhance your communication for the style and tone
- Check for plagiarism in your writing
- Format a table

## Licensure Requirements

Laws in all states, including the District of Columbia and Puerto Rico, require applicants for licensure to: 1) be of good moral character; 2) be 21 years of age; 3) have graduated from an ACPE-accredited first professional degree program of a University or school of pharmacy; and 4) have passed an examination given by the board of pharmacy. All states, the District of Columbia, Puerto Rico and the Virgin Islands use the North American Pharmacy Licensure Examination (NAPLEX). All jurisdictions require candidates for licensure to have a record of practical experience or internship training acquired under the supervision and instruction of a licensed practitioner. Some states, including Maryland, accept the training completed during a formal academic program. Publications concerning the NAPLEX licensure examination and internship experience are available from NABP (<https://nabp.pharmacy/>). For further information regarding licensure, please contact the Maryland Board of Pharmacy (<https://health.maryland.gov/pharmacy/Pages/index.aspx>).

## Transportation and Housing for Experiential Education & Off-Campus Experiences/Activities

It is the student's responsibility to assure that he/she has appropriate arrangements for transportation to/from rotation sites throughout the curriculum. Rotations begin in the first semester of the professional program. Transportation is not provided by the School. Students are not considered an agent or an employee of the University and are not insured for any accidents or mishaps that may occur during any traveling that is done as part of the student's professional program. The School does not guarantee that all required rotations will take place in the Maryland

metropolitan area and students may be required to complete rotations in other cities in Maryland or states. Transportation and housing costs are the student's responsibility.

### **Tips for Avoiding Plagiarism**

Students can avoid plagiarizing by carefully organizing and documenting materials gathered during the research process. Notes attached to these materials, whether in the form of informal notes, photocopied articles, or printouts of electronic sources, should carefully identify the origin of the information. Such attention to detail at every stage of the process will ensure an accurate bibliography that documents all the outside sources consulted and used. Students should follow these general principles when incorporating the ideas and words of others into their writing:

1. The exact language of another person (whether a single distinctive word, phrase, sentence, or paragraph) must be identified as a direct quotation and must be provided with a specific acknowledgment of the source of the quoted matter.
2. Paraphrases and summaries of the language and ideas of another person must be clearly restated in the author's own words, not those of the original source, and must be provided with a specific acknowledgment of the source of the paraphrased or summarized matter.
3. All visual media, including graphs, tables, illustrations, raw data, audio and digital material, are covered by the notion of intellectual property and, like print sources, must be provided with a specific acknowledgment of the source.
4. Sources must be acknowledged using the systematic documentation method required by the instructor for specific assignments and courses.
5. As a general rule, when in doubt, provide acknowledgment for all borrowed material.
6. Guidelines for referencing style in pharmacy academic work can be found on the Loyola Notre Dame Library Web site.
7. Personal communication such as interviews etc. must be referenced.
8. Refer to the Guidelines for AI Use at NDMU SOP for academic honesty when using AI.

### **Faculty and Administration**



Ahmed Ali, Ph.D. *assistant professor, pharmaceutical sciences (appointed 2022)*; B.S. (pharmacy), M.S. (pharmaceutical analytical chemistry), Ph.D. (pharmaceutical analytical chemistry), Minia University, Egypt

Jennifer Bailey, Pharm.D., BCPS, *associate professor & chair, clinical and administrative sciences (appointed 2012)*; B.S. (biology) Stevenson University, MD; Pharm.D., University of Maryland at Baltimore

Arindam Chatterjee, Ph.D., *assistant professor, pharmaceutical sciences (appointed 2023)*; M.S. (medicinal chemistry), Ph.D. (medicinal chemistry), University of Mississippi

James Culhane, Ph.D., *professor (appointed 2008) and associate dean for student affairs & student academic success*; B.A. (chemistry) Washington & Jefferson University; Ph.D. (pharmacology and toxicology) West Virginia University

Nicole Culhane, Pharm.D., BCPS, FCCP, *professor, clinical and administrative sciences; assistant dean for experiential education (appointed 2008)*; B.S. (pharmacy) Rutgers University, NJ; Pharm.D., Medical University of South Carolina, SC

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Alyssia Dyett, Pharm.D., *assistant professor, clinical and administrative sciences (appointed 2022)* Pharm.D. Notre Dame of Maryland University, Baltimore, MD

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