

# University of Wyoming

## School of Pharmacy

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**292 Health Sciences, (307) 766-6120**

**FAX: (307) 766-2953**

**Web site:** [www.uwyo.edu/Pharmacy](http://www.uwyo.edu/Pharmacy)

**Dean:** Kem Krueger

**Associate Dean of Students:** Tonja Woods

### Professor:

**SREEJAYAN NAIR**, B.S. College of Pharmaceutical Sciences, Manipal, India 1989; M.S. 1991; Ph.D. 1996; Professor of Pharmacology 2014, 2002.

### Associate Professors:

**JARED S. BUSHMAN**, B.A. University of Utah 2003; M.S. University of Rochester 2006; Ph.D. 2008; Assistant Professor of Pharmaceutical Science 2020.

**E. KURT DOLENCE**, B.S. University of Wyoming 1983; Ph.D. University of Kentucky 1987; Associate Professor of Medicinal Chemistry 2005, 1999.

**GUANGLONG HE**, B.S. Anhui Normal University 1986; M.S. Chinese Academy of Sciences 1994; Ph.D. 1997; Associate Professor of Medicinal Chemistry 2019, 2013.

**KEM P. KRUEGER**, Pharm.D. University of Missouri-Kansas City; Ph.D. University of Arizona 1998; Associate Professor of Social and Administrative Pharmacy 2011, 2005.

**TRACY D. MAHVAN**, B.S. University of Colorado 1995; Pharm.D. 1998; Associate Professor of Pharmacy Practice 2006, 2000.

**RESHMI L. SINGH**, B.S. Bombay University 1999; M.S. University of Toledo 2001; Ph.D. University of Minnesota 2005; Associate Professor of Social and Administrative Pharmacy 2019, 2013.

**BASKARAN THYAGARAJAN**, B.S. Madras Medical College 1994; M.S. Banaras Hindu University 1996; Ph.D. Karl Franzens University 2001; Associate Professor of Pharmaceutics 2017.

### Assistant Professors:

**MICHELLE BLAKELY**, B.A. University of South Alabama 2005; M.Ed. Auburn University 2008; Ph.D. 2011; Assistant Professor of Social and Administrative Pharmacy 2018.

**ANNA CLARA BOBADILLA**, B.S. Pierre & Marie Curie University 2008; M.S. 2010; Ph.D. 2014; Assistant Professor of Pharmaceutical Sciences 2020.

**NERVANA ELKHADRAGY**, B.S. Cairo University 2004; Pharm.D. Purdue University 2008; M.S. 2018; Ph.D. 2020. Assistant Professor of Social and Administrative Pharmacy 2020.

**KAREN MRUK**, B.A. Drew University 2003; Ph.D. University of Massachusetts Medical School 2012; Assistant Professor of Pharmaceutical Science 2018.

### Clinical Professor:

**MICHELLE L. HILAIRE**, Pharm.D. Duquesne University 2002; Clinical Professor of Pharmacy Practice 2016, 2010, 2004.

**JAMIE R. HORNECKER**, B.S. Texas Tech University 1999; Pharm.D. University of Wyoming 2003; Clinical Professor of Pharmacy Practice 2012, 2005.

### **Clinical Associate Professors:**

**LAUREN BIEHLE**, Pharm.D. University of Georgia 2010; Clinical Associate Professor 2020.

**BECKY S. LINN**, B.A. University of Wyoming 1997; Pharm.D. 2002; Clinical Associate Professor 2020.

**JANELLE L. KRUEGER**, B.S. University of Wyoming 1992; M.S. University of Kansas 1997; Clinical Associate Professor of Pharmacy Practice 2013, 2005.

**ALLISON M. MANN**, B.S. University of Colorado Boulder 2004; Pharm.D. University of Colorado Denver 2009; Clinical Associate Professor of Pharmacy Practice 2020.

**LEENA D. MYRAN**, B.S. University of Wyoming 2000; Pharm.D. 2012; Clinical Associate Professor of Pharmacy Practice 2020.

**JEREMY VANDIVER**, B.A. University of Colorado 2006; Pharm.D. University of Colorado 2010; Clinical Associate Professor 2020.

**TONJA M. WOODS**, Pharm.D. University of Wyoming 2002; Clinical Associate Professor of Pharmacy Practice 2009, 2003.

### **Clinical Assistant Professors:**

**JED DOXTATER**, B.S. University of Montana 2006; M.S. University of North Dakota 2013; Clinical Assistant Professor 2015.

**ALIVN OUNG**, Pharm.D. MCPHS University 2014; Clinical Assistant Professor 2016.

**JESSICA PAPKE**, PharmD, University of Wyoming 2017; Clinical Assistant Professor 2020.

### **Assistant Lecturers:**

**ANTOINETTE K. BROWN**, B.S. University of Wyoming 1992; Assistant Lecturer 2013.

**DAVID C. BRUCH**, B.S. University of Wyoming 1998; Pharm.D. 2010; Assistant Lecturer 2012.

**CHARLIE P. CRUZ**, B.S. Lorma Colleges 1998; M.A. Don Mariano Marcos Memorial State University 2003; M.S. Lyceum of the Philippines University Batangas 2016; Ph.D. Saint Louis College 2014; Assistant Lecturer of Medical Laboratory Science 2016.

### **Drug Information Director:**

**MELISSA L. HUNTER**, B.S. University of Wyoming 2000; Pharm.D. 2004; Associate Research Scientist 2013, 2007.

### **Professors Emeriti:**

Emery Brunett, Ph.D.

Bruce W. Culver, Ph.D.

Linda Gore Martin, Pharm.D.

Kenneth F. Nelson, Ph.D.

Robert B. Nelson, Ph.D.

Robert D. Scalley, Pharm.D.

Beverly, Sullivan, Pharm.D.

M. Glaucia Teixeira, Ph.D.

Weeranuj Yamreudeewong, Pharm.D.

### **Deans Emeriti:**

John H. Vandel, B.S. Pharmacy

Linda Gore Martin, Pharm.D.

## Vision, Mission and Values

### Vision

The University of Wyoming School of Pharmacy will be nationally recognized for innovative teaching research, teaching and pharmacy practice that develops scholar-practitioners and substantively enhances the health and well-being of the communities we serve.

### Mission

The University of Wyoming School of Pharmacy exists to advance the educational and professional development of our students, generate and translate scientific findings into meaningful innovations in healthcare, and positively impact the health and well-being of the communities we serve. We accomplish this through:

- Innovative, interdisciplinary, and interprofessional programs that integrate teaching research, teaching and pharmacy practice
- The development of scholar practitioners capable of ethically leading and embracing change and substantively enhancing health outcomes
- Individualized, faculty-led student educational experiences

As a result, we will attract, recognize and retain the very best students, faculty and staff to drive the success of the School.

### Statement of Values

The UW School of Pharmacy community is committed to supporting and promoting individual and collective excellence in teaching, research, service and pharmacy practice. We value responsibility, compassion, respect, and integrity in all endeavors.

### Learning Outcomes

The University of Wyoming adheres to the American Association of Colleges of Pharmacy Center for Advancement of Pharmaceutical Education (CAPE) educational outcomes 2013. This multipage document (and its supplements) can be accessed at [www.aacp.org](http://www.aacp.org). The school has outlined student/curriculum learning outcomes; these are available on the school website.

### Student/Faculty Relations

The faculty and staff at the School of Pharmacy treat students as adults and expect appropriate behavior as beginning professionals. The School of Pharmacy recognizes that the profession of pharmacy demands of its members the utmost degree of professional competence, ethical behavior, and integrity. Upon enrolling at the University of Wyoming SOP and at the start of each academic year, all students will sign a pledge acknowledging that they have received and read the current Honor Code and that they have made a personal commitment to uphold the code and abide by its principles. Similarly, the School of Pharmacy Professionalism Policy for faculty and staff is built on the foundation of respect for others, personal responsibility, the creation and maintenance of trust, and honesty and truthfulness. The administration, faculty, staff, students, and alumni of the School of Pharmacy at the University of Wyoming should strive to set an example of ethical leadership and professional behavior as those traits are essential for good social and business interactions.

### Accreditation and Membership

In Wyoming, as in most other states, one requirement for examination and registration as a pharmacist is graduation from an accredited entry-level professional program at a school or college of pharmacy. The Accreditation Council for Pharmacy Education (ACPE), the national accrediting agency for pharmacy, accredits pharmacy degree programs.

The Doctor of Pharmacy program at UW was most recently accredited in 2020 following an on-site evaluation by the ACPE in October 2020. Verification of current accreditation status may be made by: a) contacting the Dean's Office, School of Pharmacy; b) connecting to [www.uwyo.edu/pharmacy/](http://www.uwyo.edu/pharmacy/); c) contacting the Accreditation Council for Pharmacy Education (190 South LaSalle Street, suite 2850 Chicago IL 60603, (312) 664-3575; [cinfo@acpe-accredit.org](mailto:cinfo@acpe-accredit.org)) or d) by checking the latest Annual Directory of Accredited Professional Programs published by ACPE.

The school is a member of the American Association of Colleges of Pharmacy and adheres to its educational standards.

## Preprofessional Program and Requirements

Applicants for the professional program in pharmacy must complete preprofessional requirements before they can be admitted. Usually, two academic years totaling 72 credit hours (which may include summer and J-Term semesters) is required to complete preprofessional requirements.

All preprofessional coursework must be completed by the end of the spring semester prior to matriculation in the professional program.

Graduates of fully accredited high schools may be admitted to the preprofessional program with a math placement score of 3 or an ACT math score of 23.

## Preprofessional Program (PPCY)

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### Required Curriculum

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- [CHEM1020 - General Chemistry I](#) Credits: 4
- [CHEM1030 - General Chemistry II](#) Credits: 4
- [LIFE1010 - General Biology](#) Credits: 4
- [LIFE2022 - Animal Biology](#) Credits: 4
- [MATH2200 - Calculus I](#) Credits: 4
- [STAT2050 - Fundamentals of Statistics](#) Credits: 4
- [CHEM2420 - Organic Chemistry I](#) Credits: 4
- [CHEM2440 - Organic Chemistry II](#) Credits: 4
- [KIN2040 - Human Anatomy](#) Credits: 3
- [KIN2041 - Human Anatomy Laboratory](#) Credits: 1
- [MOLB2021 - General Microbiology](#) Credits: 4
- [MOLB3610 - Principles of Biochemistry](#) Credits: 4
- [ZOO3115 - Human Systems Physiology](#) Credits: 4
- General Electives (6 credits total)

### USP Requirement

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Students entering the university in the preprofessional program must fulfill University Studies Program (USP) requirements. The School of Pharmacy is committed to ensuring graduates are educated individuals with a broad general education as well as professional knowledge and skills. This general education component is achieved by completion of the University Studies Program requirement. The USP-C3 requirement is fulfilled in the professional doctoral program. Each student, both professional and preprofessional, is assigned an adviser to assist him or her in making appropriate academic choices.

## Professional Doctoral Program

### Admission

Admission to the professional program leading to the entry-level Pharm. D. degree is limited to 52 students per year and is highly competitive. Admission is granted by the School of Pharmacy Dean upon the advice of the School of Pharmacy Admissions Committee. Students can apply to the professional program as freshman via the Pharmacy Early Assurance program. All students applying to the UW School of Pharmacy must use the PharmCAS application ([www.pharmcas.org](http://www.pharmcas.org)) process. All materials (PCAT scores, and Letters of Recommendation) are submitted to UW using this service. The School of Pharmacy requires no supplemental application. Students granted admission to the professional program will have to pay a one-time, non-refundable, seat fee to guarantee their placement into the entering class. In addition students will be required to complete any immunizations necessary

for experiential rotations. As part of a College of Health Sciences requirement students are also expected to complete and pass a background check prior to final admission to the professional program.

Students must meet, with or without accommodation, specified requirements. The School of Pharmacy's Technical Standards can be found at <http://www.uwyo.edu/pharmacy/files/documents/admin/uwsop-technical-stds-3-2013.pdf>.

The School of Pharmacy provides opportunities to ensure that our students have co-curricular experiences in both our didactic and experiential program. Providing options for students that are co-curricular allows students to choose activities that interest them and will allow them to grow as future health professionals. A portion of co-curricular activities throughout the degree program will be required and assessed.

Students at the University of Wyoming SOP are immersed in interprofessional education opportunities during all years of the professional program. Interprofessional education provides experiences for Pharm.D. students to collaborate and share knowledge with learners in other health sciences disciplines, which fosters readiness for working in team-based care environments in their future careers.

## **Program of Study**

### **Requirements for Graduation**

The degree of Doctor of Pharmacy (Pharm.D.) is granted upon satisfactory completion of 146 hours in the professional curriculum in accordance to the school's academic standards and the fulfillment of the general university requirements. Transfer students who have previous professional pharmacy credits accepted as partial completion of residence work may not earn a degree from this university for less than 30 semester hours of resident credit in the professional program of this School of Pharmacy over a minimum of two resident semesters.

### **Graduation with Honors**

The University of Wyoming School of Pharmacy is authorized to grant honors for academic excellence. A Doctor of Pharmacy with honors designation is awarded by the University of Wyoming to students who graduate with exceptional scholarship in Pharmacy.

Exceptional scholarship in pharmacy is defined as a student who is on track to graduate with their class from the University of Wyoming School of Pharmacy and is in the top 5% of their class based on their pharmacy GPA (as assessed at the end of the fall semester of the P4 year). The Pharmacy GPA is calculated on the basis of required professional pharmacy curriculum coursework and excludes required or selected elective hours. The honors distinction must be approved by a School of Pharmacy faculty vote.

### **Academic Honesty and Professional Conduct**

Students admitted to the professional program are required to participate and sign the University of Wyoming School of Pharmacy Honor Code. Failure to sign the honor code will result in a withdrawal of admission offer or termination from the professional program.

### **Academic Standards for Progression and Graduation**

The course of study in the School of Pharmacy (SOP) is four academic years leading to a Doctor of Pharmacy degree (PharmD). The required professional coursework is organized in a prescribed, non-negotiable, sequential manner. All students have a P-designation identifying their year in the program (P1, P2, P3, P4). Required professional courses (PHCY courses) from any national or international pharmacy programs will not be applied to the UW PharmD degree. The student may petition that coursework to be applied to the program but must replace those credit hours with additional elective courses. Courses taken as S/U, including electives, are usually considered unacceptable in fulfilling program requirements. Auditing courses for the PharmD degree is not allowed.

The academic standards herein described are expected to be followed by all students admitted to the professional program. Any violation will constitute grounds for probation or termination from the professional program and will delay progression towards advanced coursework. Probation is a period of time in which the student is allowed to continue in the program under supervision. Students that do not meet academic standards and are placed on probation will have to submit a petition that includes an individualized plan of study for the next semester. This plan must be developed by the student in agreement with and signed by the academic advisor. The petition will be reviewed by the Student Affairs Committee (SAC), which will send a recommendation to the Dean for approval or denial. A leave of absence may be necessary in cases where poor academic performance is due to a medical or personal hardship. The student may appeal sanctions related to violations of the academic standards and decisions that result in

probation and termination in the program. Appeals start at the School level, followed by College and University levels, according to policy.

## Academic Standards

1. A grade of D or lower, or course withdrawal, in any required course of the professional program constitutes failure to progress toward the PharmD degree and result in probation.
2. A grade of D or lower, in any elective course of the professional program constitutes failure to progress toward the PharmD degree and result in probation.
3. Students must earn a GPA of 2.000 or better in both University coursework and professional program courses each semester and cumulatively.
4. Students must be considered full time with coursework applicable to the pharmacy degree during each semester while in good standing.
5. Incomplete coursework must be completed prior to progression into the next academic semester and will halt progression in experiential coursework.
6. Students who earn a D or lower in any experiential coursework will have their rotation sequence halted.
7. A course taken in the professional pharmacy program course can be repeated only once.
8. A maximum of three required courses are allowed to be repeated during the degree program.
9. Failure to meet any academic standards for two semesters (not necessarily consecutive) in didactic and/or experiential coursework results in automatic termination from the professional program.
10. Failure of two experiential courses, not necessarily consecutive, results in termination from the professional program.

## Elective Credits Policy

The purpose of electives at the School of Pharmacy (SOP) is to complement the pharmacy curriculum, expand knowledge within a specific pharmacy discipline and to ensure completion of the general liberal arts education of the University of Wyoming. Therefore, the following policies have been approved by the faculty for the Doctor of Pharmacy professional program (thereafter, Program).

1. As published in the University Catalog and SOP students are required to complete a minimum number of electives, specific for the student's year of matriculation into the Program. This number may vary and may be modified as adjustments are made to the professional curriculum to comply with accreditation standards. Students will be made aware of this number during initial orientation into the Program and kept informed of any changes during their stay in the academic program.
2. Students must take elective courses to satisfy first the requirements of the University Studies Program (thereafter, USP) and then complete the remaining required elective credits as general elective coursework (Program-approved required number of elective hours).
3. Students are required to complete all USP requirements even if they exceed the minimum number of elective hours initially defined in their Program in order to graduate from UW.
4. Transfer or online courses from other accredited institutions may be honored as elective credits toward the Program. Students are solely responsible to have all transcripts from other schools sent to the University and make sure that the Director of Student Services and advisors are aware of any transfer work in the professional program.
5. All required hours (including electives) must be completed by students before progressing into the P4 rotation year. Students will not be allowed to progress toward the 4th year rotations if university studies requirements were not fulfilled.
6. Students shall not take electives as Satisfactory/ Unsatisfactory (S/U) credit.
7. All courses taken in the preprofessional program or to fulfill requirements in a previous degree cannot be retaken to count as elective hours in the Program. In addition, students cannot use previously taken credit (prior to the professional program) as elective credit in the professional program.
8. Credit by exam through the Foreign Languages Dept. will not be accepted as fulfillment of elective requirements in the Program. However, it is a student's right to earn credit by exam for Wyoming History and Government, while receiving elective credits toward the Program and fulfilling USP requirements.
9. For procedures and handling of all exceptions to these policies, the students should consult the student handbook, the pharmacy student Share Point site, the SOP website, or check with the Director of Pharmacy Student Services or the Associate Dean of Students.

## Curriculum

The School of Pharmacy offers only the four-year curriculum leading to the Doctor of Pharmacy (Pharm.D.) degree. In order to keep abreast with changes in pharmaceutical education, the following curriculum is subject to change or modification as required by the accrediting agency. Students should be aware that changes must be expected and they will be included in their academic program. The School of Pharmacy does not plan to change graduation requirements inadvertently, but does reserve the right to change any provisions or requirement deemed necessary at any time within the student's term of residence. Students should note that classes are usually scheduled Monday through Friday, but may include some evening and weekend coursework. Required coursework including exams, experiential activities, presentations, etc. may take place outside the scheduled class period.

## Pharmacy, Pharm.D.

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The School of Pharmacy offers only the four-year curriculum leading to the Doctor of Pharmacy (Pharm.D.) degree.

In order to keep abreast with changes in pharmaceutical education, the following curriculum is subject to change or modification as required by the accrediting agency. Students should be aware that changes must be expected and they will be included in their academic program. The School of Pharmacy does not plan to change graduation requirements inadvertently, but does reserve the right to change any provisions or requirement deemed necessary at any time within the student's term of residence. Students should note that classes are usually scheduled Monday through Friday, but may include some evening and weekend coursework. Required coursework including exams, experiential activities, presentations, etc. may take place outside the scheduled class period.

## Required Curriculum

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- [ZOO4125 - Integrative Physiology](#) Credits: 5
- [PHCY6100 - Dose Form Design](#) Credits: 4
- [PHCY6106 - Pharmaceutical Calculations](#) Credits: 2
- [PHCY6110 - Medicinal and Natural Products Chemistry I](#) Credits: 3
- [PHCY6140 - Introduction to Social Administrative Pharmacy](#) Credits: 2
- [PHCY6160 - Pharmacist Skills I](#) Credits: 1
- [PHCY6102 - Biopharmaceutics and Pharmacokinetics](#) Credits: 4
- [PHCY6111 - Medicinal and Natural Products Chemistry II](#) Credits: 3
- [PHCY6120 - Advanced Pathophysiology](#) Credits: 3
- [PHCY6151 - Pharmacy Practice](#) Credits: 2
- [PHCY6152 - Therapeutics I](#) Credits: 3
- [PHCY6161 - Pharmacist Skills II](#) Credits: 1
- [PHCY6170 - Introductory Pharmacy Practice Experience-IPPE1](#) Credits: 1
- [PHCY6480 - Introduction to Community Pharmacy Practice](#) Credits: 4
- [PHCY6482 - Introduction to Hospital Pharmacy Practice](#) Credits: 4
- [PHCY6215 - Medicinal and Natural Products Chemistry III](#) Credits: 3
- [PHCY6230 - Pharmacology I](#) Credits: 4
- PHCY 6230 - Pharmacology I Discussion Credits: 0
- [PHCY6240 - Research and Evaluation Methods in Pharmacy](#) Credits: 3
- [PHCY6245 - Patient/Professional Interactions](#) Credits: 3
- [PHCY6260 - Pharmacist Skills III](#) Credits: 1
- [PHCY6231 - Pharmacology II](#) Credits: 4
- PHCY 6231 - Pharmacology II Discussion Credits: 0
- [PHCY6246 - Pharmacy Management, Marketing and Finance](#) Credits: 3
- [PHCY6251 - Therapeutics II](#) Credits: 3
- [PHCY6261 - Pharmacist Skills IV](#) Credits: 2
- [PHCY6270 - Intermediate Pharmacy Practice Experience-IPPE2](#) Credits: 1
- [PHCY6312 - Clinical Toxicology](#) Credits: 3
- [PHCY6341 - Pharmacy Practice Law](#) Credits: 3
- [PHCY6344 - Pharmacy Ethics](#) Credits: 1

- [PHCY6350 - Therapeutics III](#) Credits: 4
- [PHCY6357 - Clinical Pharmacokinetics](#) Credits: 2
- [PHCY6360 - Pharmacist Skills V](#) Credits: 1
- [PHCY6300 - Sterile Products](#) Credits: 2
- [PHCY6301 - Sterile Products Laboratory](#) Credits: 1
- [PHCY6340 - Health Care Policy and Advocacy](#) Credits: 2
- [PHCY6351 - Therapeutics IV](#) Credits: 4
- [PHCY6353 - Drug Literature Application](#) Credits: 2
- [PHCY6361 - Pharmacist Skills VI](#) Credits: 2
- [PHCY6370 - Advanced Pharmacy Practice Experience-IPPE3](#) Credits: 2
- [PHCY6485 - Reflective Learning in Pharmacy](#) Credits: 1
- [PHCY6470 - Internal Medicine I](#) Credits: 4
- [PHCY6473 - Ambulatory Pharmaceutical Care](#) Credits: 4 (Students complete a second semester of either Internal Medicine or Ambulatory Care)
- [PHCY6471 - Internal Medicine II](#) Credits: 4
- [PHCY6474 - Ambulatory Pharmacy Care II](#) Credits: 4
- [PHCY6481 - Advanced Community Pharmacy](#) Credits: 4
- [PHCY6483 - Advanced Institutional Pharmacy](#) Credits: 4
- [PHCY6465 - Elective Rotation In:](#) Credits: 4
- PHCY 6485 - Reflective Learning in Pharmacy Credits: 3
- Students complete 7 hours of electives during the P1-P3 year.

## Total Hours 146

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### Fourth Year [PH4]:

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*Consists of nine experiential rotations of four credit hours each and three reflective learning weeks. Rotations are considered full-time. Students may not enroll in any other coursework concurrent with rotations. Consequently, all other coursework (107 credits) must be satisfactorily completed before enrollment in P4 coursework. Note: Students will be required to live in locations other than Laramie when enrolled in experiential rotations. Responsibility for living cost and travel arrangements associated with experimental rotations rests with the student. Students participating in all experimental activities will be required to have a vehicle or an acceptable approved alternative.*

Students must complete the following Core or Required Experiential Rotations (subject to change):

- [PHCY6470 - Internal Medicine I](#) Credits: 4
- [PHCY6473 - Ambulatory Pharmaceutical Care](#) Credits: 4
- [PHCY6471 - Internal Medicine II](#) Credits: 4
- [PHCY6474 - Ambulatory Pharmacy Care II](#) Credits: 4
- [PHCY6481 - Advanced Community Pharmacy](#) Credits: 4
- [PHCY6483 - Advanced Institutional Pharmacy](#) Credits: 4
- Plus 4 Elective Rotations ([PHCY 6465](#))

### Graduate Study

The School of Pharmacy offers the Master of Science in Health Services Administration and the Master of Business Administration/Doctor of Pharmacy (M.B.A./Pharm.D.) dual degree.

### Health Services Administration, M.S.

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The School of Pharmacy offers a Master of Science online degree in health services administration. This degree is geared toward new and mid-career practitioners including pharmacists, nurses, physicians, social workers, and other health care professionals who want to become department directors, patient safety coordinators and/or directors, regulatory compliance officers, clinical research associates, health outcomes researchers or take on leadership roles as advanced practice practitioners.

The program also benefits health care workers in fields such as management positions, pharmaceutical sales representatives, medical science liaisons and pharmacy technician educators as well as new clinical faculty at newly established pharmacy colleges.

Available nationwide the master's program is delivered via a mix of online self-study and online project-based coursework.

The program can be completed in two years of part-time study. Students must travel to the UW Laramie campus for two weekend seminars during the two-year program (based on travel restrictions during the pandemic this was held online). Graduates will be expected to complete 30 credit hours of coursework and pass a comprehensive final exam. Coursework will be completed over five consecutive semesters however students can take up to 6 years to complete the program.

A prospective student should have earned at least a bachelor's degree from a regionally accredited institution. To find out more about the application process please see the following website [www.uwyo.edu/pharmacy/online-ms-program](http://www.uwyo.edu/pharmacy/online-ms-program) or contact the Student Services Office.

### **MS-HSA Curriculum**

#### **Required Coursework for all tracks**

[PHCY 5040 The Evolution of American Health](#)

[PHCY 5041 Health Services Administration Research Methods](#)

[PHCY 5042 Statistics for Health Services](#)

[PHCY 5043 Empirical Analysis for Health Services Administration](#)

[PHCY 5045 Health Services Administration Applied Research](#)

[PHCY 5046 Health Services Administration Seminar1](#) (Initial)

[PHCY 5046 Health Services Administration Seminar1](#) (Final)

#### **Recommended courses for Biopharmaceutical Regulation & Compliance Group tracks**

[PHCY 5241 Introduction to Biopharmaceutical Regulatory Compliance](#)

[PHCY 5242 The Food and Drug Administration](#)

[PHCY 5243 The Drug Enforcement Administration](#)

[PHCY 5244 State Regulations of Health Professions](#)

[PHCY 5245 Medicare and Medicaid](#)

Biopharmaceutical Regulation & Compliance students choose specific tracks which have required courses as well as additional credits from other tracks for electives.

- Specialty Tracks through the Biopharmaceutical Regulatory Compliance Group
  - Biopharmaceutical Regulatory Compliance
  - Healthcare Risk Management
  - Forensic Pharmacy
  - Healthcare Policy Analysis
  - Biopharmaceutical Product Representation
  - Clinical Research Administration
  - Patient Safety Systems
  - Healthcare Security Systems
  - Healthcare Ethics & Equity

#### **Recommended courses for Health Institution Leadership Group**

[PHCY 5441 Introduction to Health Leadership](#)

[PHCY 5442 Healthcare Financial Planning](#)

[PHCY 5443 Healthcare Human Capital Plan](#)

[PHCY 5444 Healthcare Strategic Innovation](#)

Healthcare

Health Institution Leadership students choose specific tracks which have required courses as well as 9 additional credits from other tracks or electives.

- Specialty Tracks through the Health Institution Leadership Group
  - Health Institution Leadership
  - Health Economics & Outcomes
  - Healthcare Quality & Improvement
  - Rural Healthcare Coordination
  - Geriatric Care Systems
  - Healthcare Entrepreneurism
  - Healthcare Financing
  - Health Information Technology
  - Healthcare Writing and Reporting

### **Optional electives for all programs**

(Students can also choose to take a required course from a different track as an elective) Other courses as approved by advisor. Students can choose from other tracks or electives to maximize their interests and knowledge .A total of 30 credits are required for graduation

[PHCY 5044 Preventing Fraud/Waste/Abuse](#)

[PHCY 5145 PBM Decisions](#)

[PHCY 5148 Health Economics and Policy](#)

[PHCY 5160 Graduate Problems Course](#)

[PHCY 5245 Medicare and Medicaid](#)

PHCY 5246 Prescription Drug Costs

[PHCY 5342 Healthcare Risk and Quality](#)

PHCY Healthcare Information Systems

PHCY Biomedical Ethics

PHCY Epidemiology

## **Medical Laboratory Science**

**Aley Hall, UW-Casper, (307) 268-2753**

**FAX: (307) 268-2416**

**Web site:** [www.uwyo.edu/pharmacy/mls-program/index.html](http://www.uwyo.edu/pharmacy/mls-program/index.html)

**Director:** Jed M. Doxtater, MS MLS (ASCP)<sup>CM</sup>

### **Assistant Clinical Faculty:**

**JED M. DOXTATER**, B.S. University of Montana 2007; M.S. University of North Dakota 2013; Assistant Clinical Faculty of Medical Laboratory Science 2015.

## Assistant Lecturer

**CHARLIE P. CRUZ**, B.S. Lorma Colleges 1998; M.A. Don Mariano Marcos Memorial State University 2003; M.S. Lyceum of the Philippines University Batangas 2016; Ph.D. Saint Louis College 2014; Assistant Lecturer of Medical Laboratory Science 2016.

## Mission and Goals

The mission of the Bachelor of Science in Medical Laboratory Science program at the University of Wyoming-Casper is to educate, train, and produce highly competent, ethical professionals who are committed to lifelong learning. Curriculum is designed to prepare students to meet current and future workplace challenges and technological advancements in the profession.

## Program Goals

1. Provide education in accordance with the National Accrediting Agency for clinical Laboratory Sciences (NAACLS) standards for Medical Laboratory Science programs.
2. Provide students with adequate knowledge and background experience to successfully complete the national certification examination appropriate to their level of training.
3. Provide opportunity for students to develop skills in effective communication sufficient to serve the needs of patients, public, and other healthcare professionals.
4. Graduate well qualified Medical Laboratory Scientists who can function at a career entry level, and are prepared to meet the workforce needs of the state of Wyoming and the nation.
5. Provide students with professional role models so that they may develop and practice professional behaviors, attitudes and ethics necessary to work in, and promote the field of Medical Laboratory Science.
6. Periodically undergo program review to meet the diverse educational needs of students, accreditation standards and industry demands for qualified, skilled entry level practitioners.
7. Establish an advisory board of professionals, community partners and stakeholders for program development, evaluation and improvement.
8. Promote membership and active participation in professional societies.

## Outcomes

### *Description of Entry Level Competencies of the Medical Laboratory Scientist*

At entry level, the medical laboratory scientist will possess the entry level competencies necessary to perform the full range of clinical laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunochemistry/Transfusion medicine, Microbiology, Urine and Body Fluid Analysis and Laboratory Operations, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms.

The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed.

At entry level, the medical laboratory scientist will have the following basic knowledge and skills in:

- Application of safety and governmental regulations and standards as applied to clinical laboratory science;
- Principles and practices of professional conduct and the significance of continuing professional development;
- Communications sufficient to serve the needs of patients, the public and members of the health care team;
- Principles and practices of administration and supervision as applied to clinical laboratory science;
- Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- Principles and practices of clinical study design, implementation and dissemination of results;
- Theoretical knowledge and technical skills of concepts relating to all content areas - required by NAACLS, including Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunochemistry, Microbiology, Urine and Body Fluid Analysis, Laboratory Operations and biohazard and safety.

## Accreditation

The Medical Laboratory Science Program at the University of Wyoming is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Accreditation is a process of external peer review in which an agency grants public recognition to a program of study or an institution that meets established qualification and educational standards. Participation in the accreditation

process is voluntary since there is not a legal requirement for specialized programs and institutions to participate. However, when students complete a NAACLS accredited program they become eligible to sit for national certification examinations for the profession.

The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) is a nonprofit organization that independently accredits medical technologist (MLS), clinical laboratory technician/medical laboratory technician (CLT/MLT), histotechnologist (HTL), histologic technician (HT), pathologists' assistant (Path Asst), diagnostic molecular scientist (DMS) and cytogenetic technology (CT), Phlebotomist (PBT), and clinical assistant (CA) educational programs.

*Contract information:*

National Accrediting Agency for Clinical Laboratory Sciences, 5600 North River Road, Suite 720, Rosemont, IL 60018-5119

<http://www.naacls.org>

## **Prerequisites for Admission to the MLS Professional Program**

Students must meet the following minimum criteria to be considered for Admitted Major status:

- Completion of the Casper College A.S. degree in MLT within 5 years or B.S. degree in a related science.
- Minimum grade point average (GPA) of 2.000 on all course work transferred into the University of Wyoming at Casper from other academic institutions.
- Successful completion of the Medical Laboratory Technician BOC exam is preferred. Students that have not completed the BOC may be admitted with MLS program directors approval.
- Students admitted to the program that do not hold an A.S. in MLT or a B.S. in a related science may be required to complete the University of Wyoming University Studies program in addition to the basic requirements for the Bachelor of Science in Medical Laboratory Science degree. See the current requirements at <http://www.uwyo.edu/unst/>

## **Applying for Admission to MLS Professional Program**

Students may enter the MLS professional program in the fall or spring semester of their junior year. Application for the program must be submitted to the MLS program director before finals week of the first semester the student has declared the MLS major and is enrolled in a MLS course.

Prior to participating in the enrichment experiences, students will be subject to that agency's requirements for a background check, drug testing and/or drug abuse prevention policies. Students are then subject to the random drug testing policy of that agency. These background checks are routinely required by schools, hospitals, and other agencies that participate in on-site training. Background check should be obtained from Viewpoint screening (<https://www.viewpointscreening.com/uwyo>). The Casper College MLT background check is a valid substitute if final semester of MLS program falls within 1 year of check.

After completion and submission of the program application, the student must schedule an interview with the program director for an evaluation for acceptance to the MLS program. Interviews must be completed before the student enrolls in the succeeding semester of coursework. It is the students' responsibility to complete and submit applications, and to schedule an interview with the MLS program director by the due dates.

Students are required to complete an observational enrichment experience during the final MLS semester. This observational experience is designed to demonstrate advanced concepts and topics presented in the MLS curriculum, in a practical setting.

The MLS program will provide documentation requirements, as each site may have different requirements for participation (e.g. vaccination records, HIPPA training, safety training, background check/drug screen etc.). If a student finds an appropriate observational enrichment experience outside of the opportunities available through the MLS program, the student must communicate the site to the MLS program director for approval. It will be the responsibility of the student to arrange the experience with the appropriate site personnel/HR, and program director to ensure all required documentation is provided.

Liability insurance will be required for students entering their senior year coursework. Liability insurance is provided through the University of Wyoming at a cost of \$13.00/year to the student.

*Health Requirements:* The student must provide proof of health insurance and Hepatitis B vaccination (or declination) to participate in on-campus student laboratory sessions. Hepatitis B vaccinations are available on the UW-C campus at student health, or at the county health department for a small fee. Other health records may be required to participate in enrichment activities including MMR, Tetanus, drug screen, and background check/drug screen.

## Essential Functions

Applicants must meet certain essential functions as defined by NAACLS. If you feel that you do not meet these essential functions, careful consideration should be made and advisement received before entering the MLS Program. Essential functions are the abilities and essential functions that a student must be able to perform to be successful in the learning experiences and completion of the program.

### Observational Requirements

The MLS student must be able to:

- Observe laboratory demonstrations in which biologicals are tested for their biochemical, hematological, immunological, microbiological, and histochemical components.
- Characterize the color, odor, clarity, and viscosity of biologicals, reagents or chemical reaction products.
- Employ a clinical grade binocular microscope to discriminate among the structural and color (hue, shading, and intensity) differences of microscopic specimens.
- Read and comprehend text, numbers, and graphs displayed in print and on a video monitor.

### Movement Requirements

The MLS student must be able to:

- Move freely and safely about a laboratory.
- Reach laboratory bench-tops and shelves, patients lying in hospital beds or patients seated in specimen collection furniture.
- Travel to numerous clinical laboratory sites for practical experience.
- Perform moderately taxing continuous physical work, often requiring prolonged sitting, over several hours.
- Maneuver phlebotomy and culture acquisition equipment to safely collect valid laboratory specimens from patients.
- Control laboratory equipment (i.e., pipettes, inoculating loops, test tubes) and adjust instruments to perform laboratory procedures.
- Use an electronic keyboard to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.
- Perform fine hand manipulations with dexterity.

### Communication Requirements

The MLS student must be able to:

- Read and comprehend technical and professional materials.
- Follow verbal and written instructions in order to correctly and independently perform laboratory test procedures.
- Clearly instruct patients prior to specimen collection.
- Effectively, confidentially and sensitively converse with patients regarding laboratory tests.
- Communicate with faculty members, fellow students, staff, and other health care professionals verbally and in a recorded format.
- Independently prepare papers, prepare laboratory reports, and take paper, computer, and laboratory practical examinations.

### Behavioral Requirements

The MLS student must:

- Be able to manage the use of time and be able to systematize actions in order to complete professional and technical tasks within realistic constraints.
- Possess the emotional health necessary to effectively employ intellect and exercise appropriate judgment.
- Be able to provide professional and technical services while experiencing the stresses of task-related uncertainty and a distracting environment.
- Be flexible and creative and adapt to professional and technical change.
- Recognize potentially hazardous materials, equipment, and situation and proceed safely in order to minimize risk of injury to patients, self, and nearby individuals.
- Adapt to working with unpleasant biologicals.
- Support and promote the activities of fellow students and of health care professionals.

- Realize that the promotion of peers helps furnish a team approach to learning, task completion, problem solving and patient care.
- Be honest, compassionate, ethical and responsible.

## Request for Accommodation

All students are held to the same academic and technical standards. Applicants/students with disabilities seeking accommodation must discuss their disability and accommodation needs with the University Disability Support Services ([udss@uwyo.edu](mailto:udss@uwyo.edu) or (307) 766-6189; TTY: (307) 766-3073). If appropriate and upon request and registration of the applicant, a reasonable accommodation will be made consistent with University of Wyoming guidelines.

## Medical Laboratory Science, B.S.

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The program requires 129 credit hours total, with 60 credit hours obtained in the junior/senior years to graduate. Students must complete a minimum of 42 upper division hours, 30 of which must be earned from the University of Wyoming.

## Requirements

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### Lower-Division Requirements

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MLTK and PEAC courses are available through an articulation agreement with Casper College **and can be taken only through Casper College**. Students are responsible for fulfilling all University Studies requirements. The articulation agreement, with a proposed semester-by-semester sequence, is available at: [http://www.uwyo.edu/acadaffairs/degree-plans/files/2p2/cc\\_uw\\_medical-laboratory-science\\_bs.pdf](http://www.uwyo.edu/acadaffairs/degree-plans/files/2p2/cc_uw_medical-laboratory-science_bs.pdf).

- [MATH1400 - College Algebra](#) Credits: 3
- [LIFE1010 - General Biology](#) Credits: 4 (Casper College equivalent: BIOL 1010)
- [MICR2021 - General Microbiology](#) Credits: 4
- OR
- [MOLB2021 - General Microbiology](#) Credits: 4 (Casper College equivalent: MOLB 2210)
- [CHEM1020 - General Chemistry I](#) Credits: 4 (Casper College equivalent: CHEM 1025 & CHEM 1028)
- [CHEM1030 - General Chemistry II](#) Credits: 4
- [CHEM2300 - Introductory Organic Chemistry](#) Credits: 4
- [STAT2050 - Fundamentals of Statistics](#) Credits: 4
- PEAC xxxx: Online Activity Credits: 1
- MLTK 1500 - Hematology Credits: 3
- MLTK 1600 - Clinical Immunohematology Credits: 3
- MLTK 1700 - Microscopy: UA Body Fluids Credits: 2
- MLTK 2600 - Clinical Microbiology I Credits: 2
- MLTK 2500 - Clinical Chemistry Credits: 3
- MLTK 2650 - Clinical Microbiology II Credits: 2
- MLTK 2700 - Immunology Credits: 4
- MLTK 2971 - Clinical Practicum: Hematology Credits: 2
- MLTK 2972 - Clinical Practicum: Chemistry Credits: 2
- MLTK 2973 - Clinical Practicum: Immunohematology Credits: 2
- MLTK 2974 - Clinical Practicum: Microbiology Credits: 2
- MLTK 2976 - Clinical Practicum: Serology Credits: 1
- MLTK 2977 - Clinical Practicum: UA / Body Fluids Credits: 1
- MLTK 2978 - MLT Professionalism Credits: 1

- MLTK 2800 - Clinical Pathophysiology Credits: 4
- MLTK 1800 - Principles of Phlebotomy Credits: 3

### One of the Following 3-Credit Options:

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- [SOC1000 - Sociological Principles](#) Credits: 3
- [PSYC1000 - General Psychology](#) Credits: 3
- [ANTH1200 - Introduction to Cultural Anthropology](#) Credits: 3 (USP-H)

## Upper-Division Requirements

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Upper-division courses required to complete the Bachelor of Science in Medical Laboratory Science (**All MLSK courses are only available through UW-Casper.**):

- [LIFE3050 - Genetics](#) Credits: 4
- [LIFE3600 - Cell Biology](#) Credits: 4
- [MOLB3000 - Introduction to Molecular Biology](#) Credits: 3
- [MOLB3610 - Principles of Biochemistry](#) Credits: 4
- Upper-division electives Credits: 7 (consult your academic advisor)
- [MLSK4840 - Laboratory Education Methodology](#) Credits: 1
- [MLSK4850 - Clinical Research Design](#) Credits: 2
- [MLSK4860 - Laboratory Management](#) Credits: 3 (USP-COM3)
- [MLSK4870 - Advanced Clinical Chemistry](#) Credits: 4
- [MLSK4880 - Advanced Hematology: Erythrocytes](#) Credits: 2
- [MLSK4981 - Advanced Clinical Practicum](#) Credits: 3
- [MLSK4982 - Advanced Clinical Practicum](#) Credits: 3
- [MLSK4983 - Advanced Clinical Practicum](#) Credits: 3
- [MLSK4984 - Advanced Clinical Practicum- Microbiology](#) Credits: 3
- [MLSK4890 - Professional Career Paths and Review](#) Credits: 2

## Upper Division Elective Credit Hours

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Seven upper division elective credit hours must be completed in the student's junior or senior year. These credits must be 3000 and above, and achieved through online outreach or on campus courses. A list of courses that are acceptable to fulfil this requirement can be made available to the student. If a course is in question, it is highly suggested to the student to contact the UW-C advising department or the MLS program director for requirement fulfillment confirmation.

## Enrichment Rotations and Laboratory Sessions

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The final semester of the student's senior year is comprised of didactic material being delivered in an online hybrid manner, supplemented with on campus lab sessions at the UW-Casper campus. These lab sessions will be accompanied by an observational enrichment rotation at a clinical site. This enrichment rotation will allow for the observation of advanced methodologies in a practical environment. It will be the students' responsibility for all travel and housing costs associated with the advanced clinical practicum courses.

## Probation

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Students who do not meet the minimum grade requirements stated above for MLSK course work will be placed on probation. In this period of time, students will be allowed to continue in the program under supervision, but will submit a petition which is an individualized plan of study for the next semester that is developed by the student in agreement with and signed by an academic advisor. All completed MLSK courses that fail to meet minimum grade requirements (C or 2.000 or better) must be repeated by the student. Students shall not be allowed to progress to the final semester until all courses in the previous semesters are successfully completed and a GPA of 2.000 is obtained.

## Programs

### Major

- [Medical Laboratory Science, B.S.](#)

### Graduate

- [Health Services Administration, M.S.](#)
- [Pharmacy, M.B.A./Pharm.D.](#)
- [Pharmacy, Pharm.D.](#)

### Other Programs

- [Preprofessional Program \(PPCY\)](#)

## Courses

- [PHCY1101 - First-Year Seminar](#)
- [PHCY3450 - Foundational Pathophysiology](#)
- [PHCY4160 - Problems in Pharmacy](#)
- [PHCY4170 - Pharmacy Seminar](#)
- [PHCY4210 - Regulating Dangerous Drug Use](#)
- [PHCY4240 - Pharmaceutical Homicide](#)
- [PHCY4470 - Fundamentals of Pharmacology](#)
- [PHCY4670 - Medication Malpractice](#)
- [PHCY5040 - The Evolution of American Health](#)
- [PHCY5041 - Health Services Administration Research Methods](#)
- [PHCY5042 - Statistics for Health Services](#)
- [PHCY5043 - Empirical Analysis for Health Services Administration](#)
- [PHCY5044 - Preventing Fraud/Waste/Abuse](#)
- [PHCY5045 - Health Services Administration Applied Research](#)
- [PHCY5046 - Health Services Administration Seminar1](#)
- [PHCY5141 - Introduction to Health Economics and Outcomes](#)
- [PHCY5142 - Health Economic Decision Analysis](#)
- [PHCY5143 - Comparative Effectiveness Research](#)
- [PHCY5144 - Patient Reported Outcomes](#)
- [PHCY5145 - PBM Decisions](#)
- [PHCY5146 - HEOR Data Analytics](#)
- [PHCY5147 - HEOR Data Analytics](#)
- [PHCY5148 - Health Economics and Policy](#)
- [PHCY5160 - Graduate Problems Course](#)
- [PHCY5210 - Regulating Dangerous Drug Use](#)
- [PHCY5240 - Pharmaceutical Homicide](#)
- [PHCY5241 - Introduction to Biopharmaceutical Regulatory Compliance](#)
- [PHCY5242 - The Food and Drug Administration](#)
- [PHCY5243 - The Drug Enforcement Administration](#)
- [PHCY5244 - State Regulations of Health Professions](#)
- [PHCY5245 - Medicare and Medicaid](#)
- [PHCY5341 - Introduction to Healthcare Quality](#)
- [PHCY5342 - Healthcare Risk and Quality](#)
- [PHCY5343 - Advanced Topics in Healthcare Quality](#)
- [PHCY5441 - Introduction to Health Leadership](#)



- [PHCY5442 - Healthcare Financial Planning](#)
- [PHCY5443 - Healthcare Human Capital Plan](#)
- [PHCY5444 - Healthcare Strategic Innovation](#)
- [PHCY5541 - Introduction to Biopharmaceutical Marketing and Production](#)
- [PHCY5550 - Advanced Cardiovascular Physiology and Pharmacology](#)
- [PHCY5660 - Health Care Law](#)
- [PHCY5670 - Medication Malpractice](#)
- [PHCY5887 - Molecular Neuropharmacology](#)
- [PHCY5920 - Agents for Diagnostic Imaging](#)
- [PHCY6040 - Post-Graduate Career Planning](#)
- [PHCY6051 - Topics in Illicit Drugs](#)
- [PHCY6052 - Geriatric Pharmacotherapy](#)
- [PHCY6053 - Biotechnology](#)
- [PHCY6100 - Dose Form Design](#)
- [PHCY6102 - Biopharmaceutics and Pharmacokinetics](#)
- [PHCY6106 - Pharmaceutical Calculations](#)
- [PHCY6110 - Medicinal and Natural Products Chemistry I](#)
- [PHCY6111 - Medicinal and Natural Products Chemistry II](#)
- [PHCY6120 - Advanced Pathophysiology](#)
- [PHCY6140 - Introduction to Social Administrative Pharmacy](#)
- [PHCY6151 - Pharmacy Practice](#)
- [PHCY6152 - Therapeutics I](#)
- [PHCY6160 - Pharmacist Skills I](#)
- [PHCY6161 - Pharmacist Skills II](#)
- [PHCY6170 - Introductory Pharmacy Practice Experience-IPPE1](#)
- [PHCY6215 - Medicinal and Natural Products Chemistry III](#)
- [PHCY6230 - Pharmacology I](#)
- [PHCY6231 - Pharmacology II](#)
- [PHCY6240 - Research and Evaluation Methods in Pharmacy](#)
- [PHCY6241 - Organizational and Societal Issues Within the Health Care System](#)
- [PHCY6245 - Patient/Professional Interactions](#)
- [PHCY6246 - Pharmacy Management, Marketing and Finance](#)
- [PHCY6250 - Drug Literature Evaluation](#)
- [PHCY6251 - Therapeutics II](#)
- [PHCY6260 - Pharmacist Skills III](#)
- [PHCY6261 - Pharmacist Skills IV](#)
- [PHCY6270 - Intermediate Pharmacy Practice Experience-IPPE2](#)
- [PHCY6280 - Seminar: Pharmacy Ethics](#)
- [PHCY6281 - Pharmacy Research Ethics](#)
- [PHCY6300 - Sterile Products](#)
- [PHCY6301 - Sterile Products Laboratory](#)
- [PHCY6312 - Clinical Toxicology](#)
- [PHCY6340 - Health Care Policy and Advocacy](#)
- [PHCY6341 - Pharmacy Practice Law](#)
- [PHCY6342 - Pharmacy Administration](#)
- [PHCY6343 - Methods for Population Health](#)
- [PHCY6344 - Pharmacy Ethics](#)
- [PHCY6350 - Therapeutics III](#)
- [PHCY6351 - Therapeutics IV](#)
- [PHCY6353 - Drug Literature Application](#)
- [PHCY6356 - Physical Assessment in the Evaluation of Drug Therapy](#)

- [PHCY6357 - Clinical Pharmacokinetics](#)
- [PHCY6360 - Pharmacist Skills V](#)
- [PHCY6361 - Pharmacist Skills VI](#)
- [PHCY6370 - Advanced Pharmacy Practice Experience-IPPE3](#)
- [PHCY6465 - Elective Rotation In:](#)
- [PHCY6470 - Internal Medicine I](#)
- [PHCY6471 - Internal Medicine II](#)
- [PHCY6473 - Ambulatory Pharmaceutical Care](#)
- [PHCY6474 - Ambulatory Pharmacy Care II](#)
- [PHCY6480 - Introduction to Community Pharmacy Practice](#)
- [PHCY6481 - Advanced Community Pharmacy](#)
- [PHCY6482 - Introduction to Hospital Pharmacy Practice](#)
- [PHCY6483 - Advanced Institutional Pharmacy](#)
- [PHCY6485 - Reflective Learning in Pharmacy](#)
- [PHCY6550 - Advanced Cardiovascular Physiology and Pharmacology](#)