Mission Statement
To educate professionals who will address the pharmacy-related needs of society.

Vision Statement
Through our programs of innovative teaching, service, research, and scholarship, we will achieve the distinction of being a premier college of pharmacy.

Values
• entrepreneurship
• excellence
• innovation
• integrity
• professionalism
• respect for diversity
• service
• teamwork

Administration
Andrés Malavé, M.S., Ph.D.
Dean

Hugh M. McLean,
B.S., M.S., Pharm.D., Ph.D.
Associate Dean, Research and Graduate Education

Appu Rathinavelu, B.S., M.S., Ph.D.
Associate Dean, Institutional Planning and Development

Carsten Evans,
B.S., M.S., Ph.D.
Assistant Dean, Continuing Education and Professional Affairs

Betty J. Harris, B.S., Pharm.D.
Assistant Dean, Experiential Education and Student Services

Manuel Carvajal,
B.A., M.S.A, Ph.D.
Chair, Sociobehavioral and Administrative Pharmacy

William Wolowich, B.Sc. (Pharm), Pharm.D.
Chair, Pharmacy Practice

Michelle Clark,
B.A., M.S., Ph.D.
Chair, Pharmaceutical Sciences

Mark L. Glover, B.S., Pharm.D.
Director, Palm Beach Program

John Reyes, B.S.
Administrative Director, Puerto Rico Program

Goar Alvarez, B.S., Pharm.D.
Director, Pharmacy Services

Leanne Lai, B.S., Ph.D.
Director, International Programs

William D. Hardigan,
B.S., M.S., Ph.D.
Dean Emeritus
Pharmacy

With the nation struggling to deliver high quality, affordable health care, there has come a greater appreciation of the importance of pharmacists as members of today's health care team. The pharmacist's role has expanded rapidly from drug compounding and distribution to a more patient-oriented role. The College of Pharmacy is educating its students in practices vital to meeting the challenges facing the profession and important to improving health and reducing health care costs.

The College of Pharmacy admitted its first class in 1987 to become the first College of Pharmacy in South Florida. Since then, it has graduated more than 2,700 pharmacy professionals. The college offers the doctor of pharmacy (Pharm.D.) degree program and will begin offering a graduate Ph.D. program in 2010.

Pharmacists are experts on drugs and therapeutic goals, their biological action and uses, formulation, adverse effects, and potential for drug interactions. However, pharmacists are not only knowledgeable about drugs, they must also be people-oriented. They consider both the medication and the patient to ensure the patient has the right drug, in the right amount, for the right length of time, and with minimal adverse effects. The result is improved health care.

Most pharmacists practice in patient-oriented settings: in community pharmacies, hospitals, extended care facilities, or public health clinics. In addition, pharmacists are employed by the pharmaceutical industry in research and development, in manufacturing, or as medical service representatives. They work in academic institutions, government, health maintenance organizations, and home health care programs.

It is because of these challenges and opportunities that pharmacy has assumed a wider role and become an increasingly rewarding profession involving patient counseling, compliance, and education. The shortage of pharmacists has become so critical that colleges of pharmacy would have to double their enrollments to meet the projected needs of the health care system.

Accreditation

The Accreditation Council for Pharmacy Education, 20 North Clark Street, Suite 2500, Chicago, IL 60602-5109, (312) 664-3575, 800-533-3606; Fax (312) 664-4652, Web site: www.acpe-accredit.org, has accredited the Doctor of Pharmacy Program of the College of Pharmacy, Nova Southeastern University. The College of Pharmacy is a member of the American Association of Colleges of Pharmacy.

Facilities

The College of Pharmacy is headquartered on the third floor of the Health Professions Division Administration Building. Pharmacy practice and research laboratories are located on the third floor of the Library/Laboratories Building, near the Health Professions Division’s research laboratories. Experiential sites are primarily located throughout Central and South Florida.

In the fall of 2000, the NSU College of Pharmacy opened a West Palm Beach program on RCA Boulevard
near I-95 and PGA Boulevard. In the fall of 2001, a full-time program on the campus of Pontificia Universidad Catolica de Puerto Rico in Ponce, Puerto Rico, was opened. The only distinction between the Fort Lauderdale campus-based degree and the distance degree is geography. Each location has a program director, administrators, and faculty and staff members. Interactive video technology is used to provide lectures among the three sites simultaneously. This provides for live interaction between lecturer and students regardless of location. Identical handouts, tests, and texts are used. Communication through telephone, fax, online technologies, and email are available to students at all sites. All students have access to the Health Professions Division Library, computer labs, online learning resources, and the vast technological innovations provided by NSU, which has been a leader in distance education programs for many years.

The pharmaceutical care center and pharmacy are adjacent to the health clinic in Fort Lauderdale. This is a community pharmacy with disease management services for diabetes, hypertension, hyperlipidemia, osteoporosis, and anticoagulation. It also manages pharmacy services, including drug regimen review, consultation, and teaching. The College of Pharmacy’s Drug Information Center meets a pressing demand among health care professionals for accurate, up-to-date information on medications, their adverse effects, incompatibilities, potential for interactions, and related legal issues.

Financial Aid
The purpose of the Student Financial Assistance Program at Nova Southeastern University is to help as many qualified students as possible to complete their pharmacy education. Various loans, scholarships, and grants are available to qualified students to help ease the high cost of a health professions education. Approximately 90 percent of College of Pharmacy students receive some form of financial assistance. These financial assistance programs are described in a separate university publication: A Guide to Student Financial Assistance. Although most first-year pharmacy students will be classified as graduate students for financial aid purposes, students who matriculate with fewer than 90 semester hours and students in the dual-admission program will be classified as undergraduates for the first year in the College of Pharmacy.

Transfer Credits
Requests for transfer credit must be submitted in writing to the executive associate dean. The request must include a copy of the transcript (containing the course title and final grade) and a course syllabus. Transfer credit will only be considered for courses taken at pharmacy schools accredited by ACPE or for those courses given prior approval by the executive associate dean. An official transcript from the institution attended must be provided before transfer credit will be awarded. All transfer credit requests must be received prior to August 1 of the first year of pharmacy school.

The dean’s office will evaluate the courses and determine appropriate credits. A minimum of 16 credit
hours of didactic coursework and a minimum of five advanced practice experiences must be completed at Nova Southeastern University.

Class Cancellation Policy
The university reserves the right to cancel any class. If a class is cancelled and a replacement is not offered, students will receive a full refund of tuition paid for the cancelled class. If the student registered for only one class, then other fees will be refunded as well.

Entry-Level Program
Doctor of Pharmacy Degree
Requirements for Admission
The College of Pharmacy selects students based on pre-pharmacy academic performance, Pharmacy College Admission Test (PCAT) scores, personal interviews, written applications, and letters of evaluation.

Pre-Pharmacy Studies
1. Prior to matriculation, College of Pharmacy applicants must complete a minimum of 62 semester hours of coursework at a regionally accredited college or university, including the following required courses:
   - anatomy and physiology—3 semester hours
   - general biology—3 semester hours
   - general biology or anatomy and physiology, including laboratory—4 semester hours
   - general chemistry, including laboratory—8 semester hours
   - organic chemistry, including laboratory—8 semester hours
   - English—6 semester hours
   - calculus (for science majors)—3 semester hours
   - speech—3 semester hours
   - statistics—3 semester hours (Course must be taken in the math department in order to be considered.)
   - macroeconomics—3 semester hours
   - microeconomics—3 semester hours
   - humanities/social/behavioral sciences—15 semester hours including
     - 3 semester hours of social/behavioral sciences
     - 3 semester hours of humanities
     - 9 semester hours—can be in either discipline (humanities or social/behavioral sciences)

Note: These are minimum academic requirements for admission. Students are encouraged to take additional courses such as molecular or cellular biology, genetics, biochemistry, microbiology, physiology, and physical chemistry.

2. Students must have a GPA of 2.75 or higher on a 4.0 scale. To ensure a well-rounded background for professional studies and adequate preparation in mathematics and sciences, the college requires students to earn a grade of 2.0 or better in each required pre-pharmacy course and a minimum grade of 2.0 in all biology, chemistry, and mathematics courses. Preference will be given to students with a cumulative grade point average of 3.0 or higher. However, the dean is empowered to evaluate the total qualifications of every student and to modify requirements in unusual circumstances.
3. Applicants are required to submit official scores from the Pharmacy College Admission Test (PCAT). A national, standardized examination, the PCAT is designed to measure verbal and quantitative abilities, reading comprehension, and knowledge of biology and chemistry. PCAT scores must be dated within five years of the time of interview. Applicants should take the PCAT no later than October or January prior to the expected date of matriculation.

Candidates should schedule pre-pharmacy coursework so they complete biology and some chemistry courses before taking the PCAT. The half-day test is offered in June, August, October, and January at locations throughout the United States and Canada. Application brochures for the PCAT may be available at your college. You can also receive the brochure from the Office of Admissions, NSU College of Pharmacy, by visiting www.pcatweb.info, or by forwarding a written request to

Pharmacy College Admission Test
The Psychological Corporation
555 Academic Court
San Antonio, Texas 78204
800-622-3231

Foreign Coursework
Undergraduate coursework taken at a foreign institution must be evaluated for U.S. institution equivalence. Foreign coursework must be evaluated by one of the three services listed below. When possible, an equivalent GPA should be requested as part of evaluation.

- World Education Services
  P.O. Box 745
  Old Chelsea Station
  New York, New York 10113-0745
  (212) 966-6311
  www.wes.org

- Josef Silny & Associates
  7101 SW 102nd Avenue
  Miami, Florida 33173
  (305) 273-1616
  (305) 273-1338 fax
  www.jsilny.com
  info@jsilny.com

- Educational Credential Evaluators
  P.O. Box 514070
  Milwaukee, Wisconsin 53203-3470
  (414) 289-3400
  www.ece.org

It is the applicant’s responsibility to have foreign coursework evaluated, and an official course-by-course evaluation must be sent to the Office of Admissions directly from the evaluating service.

Application Procedure
Primary Application Process
The college participates in the Pharmacy College Application Service (PharmCAS) for the receipt and processing of all applications. PharmCAS takes no part in the selection of students.

Applicants may submit applications electronically through PharmCAS Online, an interactive Web-based application that can be accessed through www.PharmCAS.org. Applicants choosing to submit a paper application may contact PharmCAS directly for an application packet at

PharmCAS
19 Main Street
Watertown, Massachusetts 02472
(617) 612-2050

Listed below are the steps necessary to complete the primary application process.
The applicant should submit the following materials to PharmCAS:
• a completed PharmCAS application
• an official transcript from the registrars of all colleges and universities attended (This must be mailed directly to PharmCAS by the college or university.)
• PCAT score(s) within the past five years

The PharmCAS application process takes four to six weeks.

The deadline for submitting a PharmCAS application for NSU-COP is January 1.

Applicants for the Ponce, Puerto Rico, site must contact the Office of Student Affairs in Ponce, Puerto Rico, for application information by calling (787) 841-2000, ext. 2431, or via email to prphss@nova.edu.

Secondary Application Process
Nova Southeastern University requires the completion of a secondary application. Upon receipt of the PharmCAS application, NSU-COP will electronically forward a secondary application.

Listed below are the steps necessary to complete the secondary application process.

The applicant should submit the following materials to Nova Southeastern University:
• a completed secondary application
• a nonrefundable application fee of $50
• a letter of evaluation from the preprofessional committee, (if such a committee does not exist, letters of evaluation from two science professors and a liberal arts professor are necessary)
• a letter of evaluation from a pharmacist is highly recommended and may substitute for a letter from a professor

The deadline date for submitting the secondary application for NSU-COP is March 1.

All admission materials sent to Nova Southeastern University should be sent to
Nova Southeastern University
Enrollment Processing Services (EPS)
College of Pharmacy
Office of Admissions
3301 College Avenue
P.O. Box 299000
Fort Lauderdale, Florida
33329-9905

Interview Process
Upon receipt of the completed application and the required credentials, the most-qualified applicants will be selected for an interview. Those selected will be notified in writing of the time and place. All applicants who are admitted by the college must be interviewed, but an invitation to appear for an interview should not be construed as evidence of acceptance.

Notice of Acceptance
Notice of acceptance or other action by the committee on admissions will be on a “rolling” or periodic schedule. Early completion of the application process is in the best interest of the applicant.

Transcripts
After acceptance, final and official transcripts from all colleges and universities attended, and/or final and official documents must be received
within 90 calendar days from the start of the term. If these final and official transcripts and/or documents are not received by that time, the student will not be allowed to continue class attendance. In addition, financial aid will not be disbursed to a student until he or she provides all the necessary documents required to be fully admitted as a regular student.

**Program Requirements**

All students are required to have ongoing access to a computer and an active account with an Internet service provider. Nova Southeastern University will provide access to email, online databases, and library resources.

Students must also provide their own transportation to experiential sites. Puerto Rico students should anticipate completion of experiential education at sites outside of the commonwealth of Puerto Rico. During the final month, all students—including those studying in Puerto Rico and Palm Beach—return to their respective sites for updates on new and changing drug therapy, presentations, and board exam preparation.

**Tuition and Fees**

- **Tuition—Fort Lauderdale and Palm Beach, Florida**
  
  Tuition for 2010–2011 (subject to change by the board of trustees without notice) is $23,898 for Florida residents and $28,265 for out-of-state students.

  Eligible students must request in-state tuition on the application. For tuition purposes, students’ Florida residency status (in-state or out-of-state) will be determined at initial matriculation and will remain the same throughout the entire enrollment of the student at NSU. Accordingly, tuition will not be adjusted as a result of any change in residency status after initial enrollment registration.

- **Tuition—Ponce, Puerto Rico**
  
  Tuition for 2010–2011 (subject to change by the board of trustees without notice) is $23,898 (U.S.) for Puerto Rico residents and $28,265 (U.S.) for nonresident students.

- A Health Professions Division general access fee of $145 is required each year. An NSU student services fee of $750 is also required annually.

- **Acceptance fee is $500.**
  
  This fee is required to reserve the accepted applicant’s place in the entering first-year class. This advance payment will be deducted from the tuition payment due on registration day, but is not refundable in the event of a withdrawal. It is payable within three weeks of an applicant’s acceptance.

- **Preregistration fee is $500.**
  
  This is due March 15, under the same terms as the acceptance fee.

  The first semester’s tuition and fees, less the $1,000 previously paid, are due on or before registration day. Tuition for each subsequent semester is due on or before the appropriate registration day. Students will not be permitted to register until their financial obligations have been met. The financial ability of applicants to complete their training at the college is important because of the limited number of positions available in each class. Applicants should have specific plans for financing
four years of professional education. This should include tuition, living expenses, books, equipment, and miscellaneous expenses.

**Undergraduate/Pharm.D. Dual Admission Program**

Nova Southeastern University Health Professions Division has established a dual admission program with the Nova Southeastern University Farquhar College of Arts and Sciences, Pontificia Universidad Catolica de Puerto Rico, and International College in Naples, Florida, for a select number of highly motivated, qualified students interested in pursuing both an undergraduate education and professional studies in pharmacy. This allows students to receive their undergraduate bachelor of science degree and a doctor of pharmacy degree in a six- to eight-year period.

Candidates must maintain a specified GPA and achieve acceptable scores on the Pharmacy College Admissions Test (PCAT). Students will spend two to three years in the undergraduate school and then will be awarded a B.S. degree upon successful completion of the second/third year at Nova Southeastern University College of Pharmacy. Students will receive the doctor of pharmacy degree after successfully completing the four-year Pharm.D. program at Nova Southeastern University College of Pharmacy.

For information and requirements, contact one of the following:

- **Office of Admissions**
  - Farquhar College of Arts and Sciences
  - Nova Southeastern University
  - 3301 College Avenue
  - Fort Lauderdale, Florida
  - 33314-7796
- **Office of Admissions**
  - Pontificia Universidad Catolica de Puerto Rico
  - 2250 Avenida Las Americas
  - Suite 584
  - Ponce, Puerto Rico 00717-0777
- **Office of Admissions**
  - International College
  - 2655 Northbrooke Drive
  - Naples, Florida 34119

**Internship**

An internship is a requirement for licensure. The internship must be completed within the guidelines of the Florida Board of Pharmacy as set forth in the Rule, Chapter 64B16-26.400(4), or by the Board of Pharmacy in the state in which the student plans to fulfill the requirements for internship. A Social Security number is necessary in order to obtain an intern license from the state of Florida. It is the responsibility of any student who does not have U.S. citizenship or permanent resident status to ensure that his or her visa status allows for the issue of a Social Security number. An intern license is a requirement for placement on practice experiences. Without practice experiences, a student cannot complete the curriculum or the requirements of the Pharm.D. degree program. Any student who has concerns regarding visa or Social Security status should contact the Office of International Students by phone at (954) 262-7241 or 800-541-6682, extension 27241, or by email at intl@nsu.nova.edu. The college's director of experiential programs provides assistance and guidance to students regarding internships.
Course of Study

The doctor of pharmacy degree is awarded after successful completion of four years of professional study in the College of Pharmacy. The curriculum stresses innovative teaching delivery and assessment methods. Students are provided an initial orientation during which they are exposed to library and online resources, professionalism, and academic expectations.

The curriculum is designed so courses integrate information and build on one another in order to provide students with the knowledge and skills necessary to be successful in the profession. The didactic component of the curriculum builds a foundation in the medical and pharmaceutical sciences. Traditional courses in anatomy and physiology, biochemistry, and microbiology are provided in order to develop a solid foundation. Pharmaceutical sciences courses including Pharmacodynamics, Pharmacokinetics, and Nonprescription Therapies are designed to provide students with a strong understanding of the principles of drug therapy. The innovative curriculum also includes the integration of medicinal chemistry and pharmacology into one course titled Pharmacodynamics, which runs four semesters. Insight into the business, human relations, communication, marketing, and legal aspects of pharmacy and the health care system are also provided.

The third year of the curriculum includes courses that focus on application of material learned during the first two years. Therapeutics is integrated with pathophysiology to address the use of drugs in the disease process and physical assessment provides the students with hands-on opportunities to develop skills essential to monitoring drug therapy. Students hone their analytical skills with courses in research design and statistics, pharmacoepidemiology, pharmacoeconomics, and drug literature evaluation. All students must also complete a minimum of 6 semester hours of elective credit.

Unique aspects of the first three years of the curriculum include an introductory pharmacy practice experience program and an integrated laboratory. Opportunities for the students to experience pharmacy practice first hand are provided early in the curriculum. In the first year, students spend four hours per week in a service learning experience. In the second year of the curriculum, students spend four hours per week in a community pharmacy setting. Practice experiences in the third year involve eight hours per week in hospital and pharmacy service settings. Patient Care Management Lab is initiated during the third year. This provides an opportunity for students to integrate information learned in all courses of the curriculum in order to facilitate application of the material in real-life practice settings.

During the fourth year, the experiential component includes nine 160-hour experiences: four in core practice areas and five elective experiences in specialty areas. At this point of the curriculum, it is expected that the students practice drug therapy monitoring with more independence. In the last month of the curriculum, all students will return to campus for updates on new and changing drug therapy, for presentations, and for board exam preparation.
Note: The advanced practice experiences are full-time commitments for the students (a minimum of 40 hours per week). Students are assigned to approved off-campus facilities and must arrange their own transportation. Experiences may be taken in any sequence, however students may not enroll in advanced practice experiences until all didactic work has been satisfactorily completed. There are currently few advanced pharmacy practice sites in Puerto Rico for the entry-level students. Students must expect to use Florida sites for most experiences. The curriculum is designed so that knowledge gained in one semester becomes the foundation for material covered in subsequent semesters. Therefore, if students do not successfully complete the coursework specified for one semester, it will impede their ability to take courses in the future semesters. (Students have 60 days after the end of the semester to resolve any grade disputes; after that, the instructor may discard all materials from the semester.) This may lead to a delay in graduation. The program must be completed within seven years from the date of matriculation.

**Study Abroad**
Opportunities for study abroad programs are provided during the summer.

**Graduation Requirements**
To receive a degree, a student must fulfill the following requirements:

- be of good moral character
- pass all required courses
- complete a minimum of 139 semester hours of coursework in the College of Pharmacy within seven years
- satisfactorily complete the assigned curriculum requirements for the degree, including all assignments, with a GPA of 2.0 on a four-point scale or a numerical average of 70 percent or above
- satisfactorily complete the capstone examination
- satisfactorily meet all financial and library obligations
- complete a minimum of 16 credit hours of didactic coursework in addition to five advanced experiences if transferring
- submit to the registrar’s office an application for degree/diploma by March 15. Applications received after March 15 will not be considered for that year’s commencement, unless approved by the dean
- must complete all professional development capstone requirements
- must attend the rehearsal and commencement program in person
- receive approval by a College of Pharmacy faculty vote
## Entry-Level Curriculum Outline

### FIRST YEAR—Fall Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHA 4000</td>
<td>Medical Terminology</td>
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<tr>
<td>BCH 5200</td>
<td>Biochemistry</td>
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<td>PHA 4100</td>
<td>Pharmaceutics I</td>
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<td>PHA 4120</td>
<td>Pharmacy Calculations</td>
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<td>Pharmacodynamics I</td>
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<td>PHA 4300</td>
<td>Pharmacy and the Health Care System</td>
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<tr>
<td>PHA 4400</td>
<td>Dean's Hour I</td>
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<tr>
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<td>Service Learning</td>
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<tr>
<td>PHA 5211</td>
<td>Pharmacy Anatomy and Physiology I</td>
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**Total:** 17

### FIRST YEAR—Winter Semester

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<tbody>
<tr>
<td>PHA 4110</td>
<td>Pharmaceutics II</td>
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<td>PHA 4110L</td>
<td>Pharmaceutics II Lab</td>
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<td>Pharmaceutical Marketing</td>
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<td>PHA 4410</td>
<td>Dean's Hour II</td>
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<td>PHA 4550</td>
<td>Drug Information Resources</td>
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<td>PHA 4580</td>
<td>Service Learning</td>
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<tr>
<td>PHA 5221</td>
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### SECOND YEAR—Fall Semester

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<td>PHA 5100</td>
<td>Clinical Pharmacokinetics</td>
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<td>PHA 5220</td>
<td>Pharmacodynamics III</td>
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<tr>
<td>PHA 5300</td>
<td>Social and Behavioral Pharmacy</td>
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<tr>
<td>PHA 5380</td>
<td>Pharmacy Law</td>
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<tr>
<td>PHA 5580</td>
<td>IPPE: Community</td>
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**Total:** 15

### SECOND YEAR—Winter Semester

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<td>PHA 5150</td>
<td>Nonprescription Therapies</td>
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<td>PHA 5230</td>
<td>Pharmacodynamics IV</td>
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<td>PHA 5330</td>
<td>Communication Skills</td>
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<td>PHA 5580</td>
<td>IPPE: Community</td>
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<tr>
<td>PHA 5610</td>
<td>Therapeutics/Pathophysiology I</td>
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**Total:** 17
### THIRD YEAR—Fall Semester

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<th>Course Title</th>
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<tr>
<td>PHA 6300</td>
<td>Research Design and Statistics</td>
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<td>PHA 6440</td>
<td>Pharmacy Management</td>
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<td>PHA 6560</td>
<td>Physical Assessment*</td>
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<td>PHA 6580</td>
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<tr>
<td>PHA 6620</td>
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<tr>
<td>PHA 6710</td>
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<tr>
<td>PHA 6710L</td>
<td>Patient Care Management I Lab</td>
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<tr>
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### THIRD YEAR—Winter Semester

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHA 6410</td>
<td>Pharmacoepidemiology and Pharmacoeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PHA 6610</td>
<td>Drug Literature Evaluation</td>
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<tr>
<td>PHA 6630</td>
<td>Therapeutics/Pathophysiology III</td>
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<tr>
<td>PHA 6680</td>
<td>IPPE: Pharmacy Service</td>
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<tr>
<td>PHA 6720</td>
<td>Patient Care Management II</td>
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### FOURTH YEAR—Summer/Fall/Winter Semesters

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHA 7610</td>
<td>APPE: Elective I</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7620</td>
<td>APPE: Acute Care Medicine</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7630</td>
<td>APPE: Elective II</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7640</td>
<td>APPE: Ambulatory Medicine</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7650</td>
<td>APPE: Elective III</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7660</td>
<td>APPE: Select Community</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7670</td>
<td>APPE: Elective IV</td>
<td>4</td>
</tr>
<tr>
<td>PHA 7680</td>
<td>APPE: Select Hospital</td>
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<td>PHA 7690</td>
<td>APPE: Elective V</td>
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<tr>
<td>PHA 7801</td>
<td>Professional Development Capstone I</td>
<td>0</td>
</tr>
<tr>
<td>PHA 7802</td>
<td>Professional Development Capstone II</td>
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</tr>
<tr>
<td>PHA 7803</td>
<td>Professional Development Capstone III</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

The curriculum is frequently being revised and modified to meet the demands of the profession. These courses are representative of the overall requirements of the program at the time of publication.

* PHA 6560 is taught as an institute, schedule to be announced.
International Pharmacy Graduates Doctor of Pharmacy Degree

In an effort to meet the growing demands of the pharmacy profession, the Nova Southeastern University College of Pharmacy provides an opportunity for international pharmacy graduates to enter the Pharm.D. degree program with advanced standing. Upon completion of the degree program, students are eligible to take the North American Pharmacy Licensing Examination (NAPLEX). This opportunity is designed exclusively for graduates of pharmacy degree programs outside of the United States jurisdiction, allowing them to build upon their pharmacy education and prepare them for clinical pharmacy practice.

The International Pharmacy Graduate curriculum educates students to achieve the same outcomes as the Entry-level Pharm.D. Degree Program. Courses integrate information and build on one another to provide students with the knowledge and skills necessary to be successful in the profession. Pharmacodynamics, Pharmacokinetics, and Nonprescription Therapies courses provide a strong understanding of the principles of drug therapy. The business, human relation, communication, marketing, and legal aspects of pharmacy and the health care system are also studied. Courses focus on application of material learned, the use of drugs in the disease process, and developing skills essential to monitoring drug therapy. Students hone their analytical skills with courses in Research Design and Statistics, Pharmacoepidemiology, and Pharmacoeconomics and Drug Literature Evaluation.

Practice experiences in community, hospital, and other traditional pharmacy settings facilitate real-life application of the material and provide opportunities to integrate information learned. Full-time practice experiences facilitate application of drug therapy monitoring with more independence. International pharmacists applying for the entry-level program may be awarded advanced standing based on their previous coursework. Advanced standing and the actual degree curriculum will vary based on the matriculant's previous pharmacy coursework. The curriculum provided is representative of a typical international pharmacist entering the entry-level program.

The curriculum stresses innovative delivery and assessment methods. Courses will be on campus and will be taught by interactive video; the college's experiential sites will be used extensively. All lectures, handouts, reading materials, and exams will be in English.

Admissions Requirements

The College of Pharmacy selects students based on previous academic performance, TOEFL scores (if applicable), GRE or PCAT scores, written applications, and letters of evaluation. Prior to matriculation, College of Pharmacy applicants must complete and receive a bachelor of science degree in pharmacy from a program accredited by the country of residence. Applicants may be required to complete some pre-pharmacy coursework from the College of Pharmacy.

The Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is...
not English. The TOEFL, administered worldwide, measures the ability of non-native speakers to understand and use North American English. Preference will be given to students with scores of at least 213 on the computer-based exam or 79–80 on the Internet-based exam. TOEFL scores must be no more than two years old at the time of application.

You can receive the TOEFL brochure from the Office of Admissions, by visiting TOEFL’s Web site (www.toefl.org), or by forwarding a written request to TOEFL/TSCE Services
P.O. Box 6153
Princeton, NJ 08541-6153
(609) 771-7100

The following coursework is currently required for admission (semester credit hours equivalent to entry-level curriculum):

- Anatomy and Physiology (6 credits)
- Biochemistry (4 credits)
- Microbiology (3 credits)
- Pharmacology (two additional pharmacology review courses will be provided as part of the curriculum)
- Pharmaceutics/pharmacokinetics (20 total credits)

Accepted students will be required to take a Pharmacy Calculations exam upon entry to ensure adequate background in Pharmacy Calculations. Remediation will be provided to those students who do not pass the exam.

Application Procedures
Candidates for admission are responsible for submitting an application form, application fee, a complete set of official transcripts, official foreign coursework evaluation if applicable, official TOEFL scores if applicable, and letters of evaluation.

A completed international application form along with a $50 (U.S.), nonrefundable application fee must be submitted to the Office of Admissions no later than February 1 of the year of anticipated entry. An application is available on our Web site (www.nova.edu) or by contacting the Office of Admissions.

In order to complete an application, a candidate must arrange to have his or her transcripts, test scores, and letters of evaluation forwarded to the Office of Admissions no later than March 1 of the year of anticipated entry.

Transcripts
Official college transcripts from all undergraduate and graduate institutions attended in the United States or U.S. territories must be forwarded directly from the institutions to Nova Southeastern University, Enrollment Processing Services (EPS), College of Pharmacy, Office of Admissions, 3301 College Avenue, P.O. Box 299000, Fort Lauderdale, Florida 33329-9905. It is the applicant's responsibility to ensure that arrangements are made for these to be sent. Final transcripts of all of the applicant's work must be forwarded to the Office of Admissions prior to matriculation. Photocopies and facsimiles will not be accepted. A transcript is required for each college or university even though transfer credit from one institution may appear on another institution's transcript.

Foreign Coursework
Undergraduate coursework taken at a foreign institution must be evaluated for U.S. institution equivalence. Foreign coursework must be evaluated by one of the services listed below:

- World Education Services
  P.O. Box 745
  Old Chelsea Station
Neither the GRE nor the PCAT is required, but submission of one or the other is highly recommended. A combined GRE score greater than 1000 is preferred. The PCAT is designed to measure verbal ability, quantitative ability, reading comprehension, and knowledge of biology and chemistry. PCAT scores must be no more than five years old at the time of the interview.

Interview Process
Upon receipt of the completed application and the required credentials, the most qualified applicants will be invited to interview. Those applicants selected will be notified in writing of the time and place. All applicants who are admitted to the college must be interviewed, but an invitation to appear for an interview should not be construed as evidence of acceptance.

Letters of Evaluation
Three letters of recommendation/evaluation are required. One should be from the dean/director of a pharmacy program. In addition, a letter of reference from a registered pharmacist is recommended. Forms for letters of evaluation are available on our Web site (www.nova.edu) or by contacting the Office of Admissions.

Note: All documents submitted to the Office of Admissions become the property of Nova Southeastern University. Originals or copies of originals will not be returned to the applicant or forwarded to another institution, agency, or person.

Inquiries should be directed to Nova Southeastern University
Attention: Pharmacy Admissions
3200 South University Drive

It is the applicant’s responsibility to have this coursework evaluated, and an official evaluation must be sent to Nova Southeastern University, Enrollment Processing Services (EPS), College of Pharmacy, Office of Admissions, 3301 College Avenue, P.O. Box 299000, Fort Lauderdale, Florida 33329-9905.

TOEFL
Applicants must request to have official TOEFL scores sent if English is not their native language. Scores must come directly to the Office of Admissions, College of Pharmacy from the testing center—photocopies and facsimiles will not be accepted.

Extensive experience in an English-speaking environment may be evaluated for substitution of this requirement.

Graduate Record Examination or Pharmacy College Admission Test
For 2011 entering class and later, it is required that applicants submit official scores from either the Graduate Record Examination (GRE) or the Pharmacy College Admission Test (PCAT). For 2010 applicants,
Requirements

All students are required to have ongoing access to a computer and an active account with an Internet service provider (ISP).

This curriculum requires a student’s full effort. Students are responsible for their own transportation to the experiential sites.

Tuition and Fees

The board of trustees has established the following tuition and fees for 2010–2011, which are subject to change at any time at the board’s discretion:

- Tuition is $28,265 (U.S.) with an NSU College of Pharmacy contract and $31,255 (U.S.) for noncontract students, regardless of credit-hour load. A Health Professions Division general access fee of $145 is required each year. An NSU student services fee of $750 is also required annually.

- Preregistration fee is $1,000. This fee is due May 15, and is required to reserve the accepted applicant’s place in the entering first-year class. This advance payment will be deducted from the tuition payment due on registration day, but is not refundable in the event of a withdrawal.

The first semester’s tuition and fees, less the $1,000 previously paid, are due on or before registration day. Tuition for each subsequent semester is due on or before the appropriate registration day. Students will not be permitted to register until their financial obligations have been met.

Graduation Requirements

Graduation requirements of International Pharmacy Graduates are the same as the Entry-level Pharm.D. Program, except international students must complete a minimum of 107 credit hours of coursework at the College of Pharmacy within six years.

International/Immigration Information

It is the responsibility of the applicant to contact the Office of International Students for information on immigration regulations and student visa requirements. Inquiries can be directed to

Nova Southeastern University
Attention: Office of International Students
3301 College Avenue
Fort Lauderdale, Florida
33314-7796

(954) 262-7241
800-541-6682, ext. 27241
Fax: (954) 262-7265
Email: intl@nsu.nova.edu
www.nova.edu/cwis/registrar/isss

It is the responsibility of any student who does not have U.S. citizenship or permanent resident status to ensure that his or her visa status allows for the issue of a Social Security number. A Social Security number is mandatory in order to receive an intern license, which is a requirement for placement on practice experiences. Without practice experiences, a student cannot complete the curriculum or the requirements of the Pharm.D. degree program.
### International Curriculum Outline

**FIRST YEAR—Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Taken With</th>
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</thead>
<tbody>
<tr>
<td>PHA 4000 Medical Terminology</td>
<td>0</td>
<td>P1 Entry-Level</td>
</tr>
<tr>
<td>PHA 4300 Pharmacy and the Health Care System</td>
<td>2</td>
<td>P1 Entry-Level</td>
</tr>
<tr>
<td>PHA 4400 Dean's Hour I</td>
<td>0</td>
<td>P1 Entry-Level</td>
</tr>
<tr>
<td>PHA 5100 Clinical Pharmacokinetics</td>
<td>3</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5220 Pharmacodynamics III</td>
<td>5</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5300 Social and Behavioral Pharmacy</td>
<td>2</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5380 Pharmacy Law</td>
<td>2</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5580 IPPE: Community</td>
<td>0</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 4220 Pharmacodynamics Principles and Cardiovascular Pharmacology</td>
<td>4</td>
<td>Exclusively for International Pharmacy Graduates</td>
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**Total** 18

### FIRST YEAR—Winter Semester

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHA 4410 Dean’s Hour II</td>
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<td>P1 Entry-Level</td>
</tr>
<tr>
<td>PHA 4310 Pharmaceutical Marketing</td>
<td>2</td>
<td>P1 Entry-Level</td>
</tr>
<tr>
<td>PHA 4550 Drug Information Resources</td>
<td>1</td>
<td>P1 Entry-Level</td>
</tr>
<tr>
<td>PHA 5150 Nonprescription Therapies</td>
<td>3</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5230 Pharmacodynamics IV</td>
<td>4</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5330 Communication Skills</td>
<td>2</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5580 IPPE: Community (Continued from first semester)</td>
<td>3</td>
<td>P2 Entry-Level</td>
</tr>
<tr>
<td>PHA 5610 Therapeutics/Pathophysiology I</td>
<td>5</td>
<td>P2 Entry-Level</td>
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**Total** 20
### SECOND YEAR—Fall Semester

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
<th>Taken With</th>
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</thead>
<tbody>
<tr>
<td>PHA 6300 Research Design and Statistics</td>
<td>3</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6440 Pharmacy Management</td>
<td>3</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6560 Physical Assessment*</td>
<td>2</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6580 IPPE: Health System</td>
<td>2</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6620 Therapeutics/Pathophysiology II</td>
<td>5</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6710 Patient Care Management I</td>
<td>2</td>
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<td>PHA 6710L Patient Care Management I Lab</td>
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### SECOND YEAR—Winter Semester

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PHA 6410 Pharmacoepidemiology and Pharmacoeconomics</td>
<td>3</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6610 Drug Literature Evaluation</td>
<td>2</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6630 Therapeutics/Pathophysiology III</td>
<td>4</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6680 IPPE: Pharmacy Service</td>
<td>2</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6720 Patient Care Management II</td>
<td>1</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>PHA 6720L Patient Care Management II Lab</td>
<td>0</td>
<td>P3 Entry-Level</td>
</tr>
<tr>
<td>Suggested Elective</td>
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### THIRD YEAR—Summer/Fall/Winter Semesters

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<th>Course</th>
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<tr>
<td>PHA 7610 APPE: Elective I</td>
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<td>P4 Entry-Level</td>
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<tr>
<td>PHA 7620 APPE: Acute Care Medicine</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7630 APPE: Elective II</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7640 APPE: Ambulatory Medicine</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7650 APPE: Elective III</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7660 APPE: Select Community</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7670 APPE: Elective IV</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7680 APPE: Select Hospital</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7690 APPE: Elective V</td>
<td>4</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7801 Professional Development Capstone 1</td>
<td>0</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7802 Professional Development Capstone 2</td>
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<td>P4 Entry-Level</td>
</tr>
<tr>
<td>PHA 7803 Professional Development Capstone 3</td>
<td>0</td>
<td>P4 Entry-Level</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
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**Total Curriculum Credit Hours:** 107

The curriculum is revised and modified frequently to meet the demands of the profession. These courses are representative of the overall requirements of the program at the time of publication.
College of Pharmacy Course Descriptions

Note: Listed at the end of each entry are lecture clock hours, laboratory clock hours, and credit hours.

Basic Medical Sciences

BCH 5200—Biochemistry
Covers the structures, functions, and metabolism of lipids, proteins, carbohydrates, nucleic acids, and body systems. Includes pharmaceutical application of material. (64-0-4)

MIC 5200—Microbiology
Covers the underlying nature of infectious microorganisms. Emphasizes cause, prevention, and control of infectious diseases; immunology; mycology; parasitology; bacteriology; virology. (48-0-3)

PHA 5211—Pharmacy Anatomy and Physiology I
Study of the structure and function of cells, tissues, organ systems, and the organism. Physiology covers function and biological processes and their integration and control. This course interrelates the study of structure and function with special attention given the fundamental physiological principles. (64-0-4)

PHA 5221—Pharmacy Anatomy and Physiology II
Continuation of Pharmacy Anatomy and Physiology I. (64-0-4)

Pharmacy—Required Courses

PHA 4000—Medical Terminology
The focus of this course is to explain the technique of medical word building and introduce health-related anatomical, physiological, and pathological terms organized by specific body systems. Students will be required to demonstrate the mastery of medical terminology during their first year. (16-0-0)

PHA 4100—Pharmaceutics I
Theory of physicochemical principles that apply to pharmaceutical systems and a study of liquid and solid dispersion systems. (48-0-3)

PHA 4110—Pharmaceutics II
Continuation of the study of traditional pharmaceutical dosage forms with emphasis on solid and semisolid systems and an introduction to the novel drug delivery systems. Preparation and dispensing of pharmaceutical solution, emulsion, suspension, semisolid, and solid dosage forms are studied in laboratory. Prerequisites: Pharmaceutics I and Pharmacy Calculations (32-48-3)

PHA 4110L—Pharmaceutics II Lab
Lab section for PHA 4110 (Pharmaceutics II). Student must be registered for PHA 4110 and PHA 4110L concurrently.

PHA 4120—Pharmacy Calculations
Different methods used by the pharmacist in the process of solving the mathematical problems typically found in the practice of the profession of pharmacy. Emphasizes metric and common systems conversions, fundamentals of measurements, percentages, dose calculation, specific gravity, dilution, concentration, and dosage adjustment. (16-0-1)

PHA 4130—Pharmacokinetics
Mechanisms and rates of absorption and disposition of drugs. Examines
how the fate of drugs in the body is influenced by physiologic and biochemical processes. The principles involved in drug absorption, distribution, metabolism, and elimination are discussed. (64-0-4)

PPS 4180—Prescription Practice
Applies scientific, legal, and ethical principles to the compounding and dispensing of medicinal agents in modern medical practice. Analysis, interpretation, and evaluation of prescription products in various forms. (16-48-3)

PPS 4180L—Prescription Practice Lab
Students must be registered for PHA 4180 and 4180L concurrently.

PHA 4200—Pharmacodynamics I
Applies the principles of organic chemistry in order to understand drug action at the molecular level, with special emphasis on determinants of drug absorption and distribution, physiological receptors and drug receptor interactions, and drug metabolism and elimination. (48-0-3)

PHA 4210—Pharmacodynamics II
Applies the principles of biochemistry, physiology, and pathophysiology to understand drug actions at the receptor, cellular, and system levels under normal physiological and pathological conditions. Focuses on the drugs that act on the autonomic nervous system, cardiovascular system, and blood components. (48-0-3)

PHA 4220—Pharmacodynamics Principles and Cardiovascular Pharmacology
This course will apply the principles of organic chemistry, biochemistry, physiology, and pathophysiology to understand drug actions at the receptor, cellular and system levels under normal physiological and pathological conditions. Special emphasis will be placed on students understanding of determinants of drug absorption, distribution, physiological receptors, drug-receptor interaction, drug metabolism and elimination. This course will also focus on the drugs that act on the autonomic nervous system, cardiovascular system, and blood components as well. The rationale for the use of these therapeutic agents, their effects on cells, tissues, organ systems, and patients; the mechanisms underlying these effects; the therapeutic value of specific drug effects; and the adverse effects of the drugs will be addressed as well. (64-0-4)

PHA 4300—Pharmacy and the Health Care System
Covers major concepts related to the structure and functioning of the U.S. health care system. Emphasizes analyzing issues associated with health care, personnel, and the way that health care is organized, financed, and regulated. Examines the provision of drugs and pharmacy services in the context of the health care enterprise. (32-0-2)

PHA 4310—Pharmaceutical Marketing
Overview of the drug and pharmaceutical care development and distribution system. (32-0-2)

PHA 4400—Dean’s Hour I
Introduction to the pharmacy profession and professionalism. (6-0-0)

PHA 4410—Dean’s Hour II
Continuation of Dean’s Hour I. (6-0-0)
PHA 4550—Drug Information Resources
Detailed review of the various drug information resources available. Students learn the strengths and weaknesses of the various references and how to apply their use in practice. An experiential portion will provide practice in locating drug information and preparing written and verbal responses. (16-0-1)

PHA 4580—Service Learning
On-site experience is intended to foster a sense of community involvement. Students learn to be team members, develop listening and observation skills, strengthen professional demeanor, and reflect on their impact in the community. (13-70-2)

PHA 5100—Clinical Pharmacokinetics
Applies the concepts and techniques of biopharmaceutics and pharmacokinetics to the rational design of the individualized drug dosage regimens, taking into consideration factors such as hepatic and renal impairment, effects of other diseases, and drug interactions. Prerequisite: Pharmacokinetics (48-0-3)

PHA 5150—Nonprescription Therapies
The use of nonprescription therapies including drug and nondrug treatments. Discusses patient education information, potential drug interactions, and recommended treatments. (48-0-3)

PHA 5220—Pharmacodynamics III
Continuation of Pharmacodynamics I and II. Covers drugs that are used in the treatment of pain and inflammation, CNS related disorders, and endocrine-medicated disorders. Prerequisite: Pharmacodynamics I (80-0-5)

PHA 5230—Pharmacodynamics IV
Continuation of Pharmacodynamics I, II, and III. Covers anti-infective agents, cancer, and anti-cancer drugs. Emphasizes the mechanism of action, pharmacodynamics, and therapeutic uses of drug categories. Identifies adverse effects, contraindications, and clinically significant interactions with drugs and/or food. Prerequisite: Pharmacodynamics I (64-0-4)

PHA 5300—Social and Behavioral Pharmacy
Background in the sociological, psychological, and behavioral aspects of pharmacy practice to help students understand the patients’ experience of health and illness. Variability in morbidity and mortality, health seeking and patient behavior is explored. (32-0-2)

PHA 5330—Communication Skills
Focuses on the tools necessary to conduct effective and efficient patient interactions. Systematic interviewing, patient assessment, and education techniques are emphasized. Specific communication tools to help foster caring therapeutic relationships with patients are incorporated. (32-0-2)

PHA 5380—Pharmacy Law
This course covers federal and state statues, rules, and regulations that affect pharmacy practice and selected aspects of general law and ethics. Emphasizes the interpretation of those laws affecting the practice of community and institutional
College of Pharmacy

pharmacy. Ethical situations are also presented. (32-0-2)

PHA 5580—Introductory Pharmacy Practice Experience: Community
Students are exposed to the role and responsibilities of the professionally oriented community pharmacist and the importance of effective communication between pharmacist, patients, and other health care providers. On-site experience provides basic knowledge of the drug distribution process in a community pharmacy. Legal, ethical, and practice issues in pharmacy are discussed during classroom activities. (16-120-3)

PHA 5610—Therapeutics and Pathophysiology I
The therapeutics/pathophysiology curricular components are divided into three courses. Courses need not be taken in sequence. Therapeutics/pathophysiology combines pathophysiology of disease with rational pharmacotherapy. Courses are divided into disease-state modules and focus on the therapeutic decision-making process. Concepts include physical findings, laboratory values, adverse drug effects, drug interactions, and patient education. Application of previous course materials, including pharmacodynamics and pharmacokinetics, is required. The disease categories presented in this course include the following: introduction to therapeutic concepts, cardiovascular disease, renal diseases, nutritional issues, and gastrointestinal disorders. **Prerequisites:** Pharmacodynamics I, II, and III (80-0-5)

PHA 6101—Clinical Pharmacology
This course is designed to provide the student with the background necessary for the clinical sciences and to help students acquire a body of knowledge about the drugs that will provide the foundation by which pharmacists will practice pharmaceutical care. The objective of this course is to review all of the major classes of cardiovascular drugs and those of the central nervous system. The course will address the rationale for their use as therapeutic agents; their effects on cells, tissues, organ systems, and patients; the mechanisms underlying these effects; the therapeutic value of specific drug effects; and the adverse effects of drugs. (64-0-4)

PHA 6300—Research Design and Statistics
Research methodology and statistics. Basic statistical concepts are covered and students are expected to understand, evaluate, and generate clinical, biomedical, and health care services research. (48-0-3)

PHA 6410—Pharmacoepidemiology and Pharmacoeconomics
Overview of pharmacoepidemiology and pharmacoeconomics. Identifies principles, methodologies of pharmacoepidemiology/pharmacoeconomic analyses—the strengths and weaknesses of specific methods. Practical examples for successful implementation of these concepts are discussed. (48-0-3)

PHA 6440—Pharmacy Management
Overview of management, theory, human resources, and financial management applied to pharmacy operations. (48-0-3)
PHA 6560—Physical Assessment
Patient assessment for pharmacists in both ambulatory and inpatient settings. Demonstrates and explains clinical interview and physical examination techniques. Students practice techniques on one another under supervision. Charting, interpretation of findings, and evaluation of common clinical entities will be integrated into these activities. (15-48-2)

PHA 6580—Introductory Pharmacy Practice Experience: Health System
Students are exposed to various aspects of institutional pharmacy practice including drug storage, drug security, and policies and procedures. On-site experience provides basic knowledge of the drug distribution process in a hospital setting. Activities will include prescription preparation, using a unit dose system, use of references, and inventory management. Prerequisite: P3 standing (0-120-2)

PHA 6590—Advanced Pharmacy Practice Experience: Community
This advanced practice experience promotes expertise in outpatient care and enables a student to develop skills as a clinical practitioner in a community setting. Students will be exposed to the role and responsibilities of the pharmacist in the community setting, as well as the importance of appropriate and effective communication in the process for developing appropriate individualized treatment plans and of the follow-up evaluation to determine actual outcomes. Under supervision, students will be required to fill prescriptions and counsel patients according to federal, state, and local laws. Students will be assigned projects, topics, and activities that will expand the foundation of didactic coursework and enhance the experience. (0-160-4)

PHA 6610—Drug Literature Evaluation
Provides a framework to guide the student through the thought processes necessary to evaluate different types of medical information. The student is able to apply learned techniques in information retrieval, evaluation, and communication by conducting actual literature evaluations on relevant therapeutic topics. Prerequisites: Drug Information Resources and Research Design and Statistics (32-0-2)

PHA 6620—Therapeutics and Pathophysiology II
This is the second of three courses in therapeutics/pathophysiology. Courses need not be taken in sequence. Therapeutics/pathophysiology combines pathophysiology of disease with rational pharmacotherapy. Courses are divided into disease state modules and focus on the therapeutic decision-making process. Concepts include physical findings, laboratory values, adverse drug effects, drug interactions, and patient education. Application of previous course materials, including pharmacodynamics and pharmacokinetics is required. The disease categories presented in this course include the following: endocrine and other hormonal disorders, smoking cessation, neurological and psychiatric disorders, and clinical toxicology. Prerequisites: Pharmacodynamics I, II, and III (80-0-5)
**PHA 6630—Therapeutics and Pathophysiology III**  
This is the third of three courses in therapeutics/pathophysiology. Courses need not be taken in sequence. Therapeutics/pathophysiology combines pathophysiology of disease with rational pharmacotherapy. Courses are divided into disease state modules and focus on the therapeutic decision-making process. Concepts include physical findings, laboratory values, adverse drug effects, drug interactions, and patient education. Application of previous course materials, including pharmacodynamics and pharmacokinetics is required. The disease categories presented in this course include the following: Infectious diseases/HIV/AIDS, transplant, immunology, and oncology. **Prerequisites:** Pharmacodynamics I, II, and III (64-0-4)

**PHA 6680—Introductory Pharmacy Practice Experience: Pharmacy Service**  
Introduction to the application of skills, concepts, and knowledge acquired in the didactic component of the curriculum in institutional pharmacy settings. This course promotes the development of pharmacy practice skills and furthers the development of communication skills. On-site experience enables students to prepare for advanced practice experiences. **Prerequisite:** P3 standing (0-120-2)

**PHA 6690—Advanced Pharmacy Practice Experience: Hospital**  
This advanced practice experience enhances student awareness of the various aspects of hospital pharmacy practice and the role and responsibilities of the hospital pharmacist. Students will expand their knowledge and practice skills by participating in distribution, clinical activities, and administrative activities. Active decision making and continued development of problem-solving skills are activities in this advanced practice experience. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

**PHA 6710—Patient Care Management I**  
Sequence of laboratory-based courses use a case study method to draw on knowledge acquired from all other courses in the curriculum. Cases present patients with conditions that reflect real-life situations. The course is divided by disease states and problems may range from therapeutic to social behavioral issues. Emphasizes decision-making processes and integrating knowledge and skills from all courses in the curriculum. **Prerequisites:** Clinical Pharmacokinetics; Pharmacodynamics I, II, and III; Therapeutics I (16-24-2)

**PHA 6710L—Patient Care Management I Lab**  
Lab section for PHA 6710 (Patient Care Management I). Student must be registered for PHA 6710 and PHA 6710L concurrently.

**PHA 6720—Patient Care Management II**  
Continuation of Patient Care Management I. **Prerequisites:** Pharmacodynamics II and III, Therapeutics/Pathophysiology I and II, and Clinical Pharmacokinetics. (8-24-1)

**PHA 6720L—Patient Care Management II Lab**  
Lab section for PHA 6720 (PCMII) Student must be registered for PHA 6720 and PHA 6720L concurrently.
PHA 6790—Advanced Pharmacy Practice Experience: General Clinical
This advanced practice experience promotes competence in the basic skills and knowledge required to practice as a general clinical pharmacist in a hospital setting. Students will be exposed to the everyday management of a hospital pharmacy and the patient care and administrative responsibilities of a clinical coordinator or director of pharmacy. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

PHA 7610/7630/7650/7670/7690—Advanced Pharmacy Practice Experience: Electives
Four supervised elective experiences that each consist of a four-week, full-time (40 hours per week), off-campus experience in a pharmacy practice specialty area that will allow students to obtain broader experiences. At least one of these electives must involve direct patient care. Elective experiences include, but are not limited to, administration, geriatrics, pharmacokinetics, infectious disease, nutritional support, psychiatry, pediatrics, critical care, cardiology, neonatology, immunology, and clinical research. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

PHA 7620/7640/7660/7680—Required Advanced Pharmacy Practice Experiences
Each required advanced practice experience consists of a four-week, full-time (40 hours per week), off-campus experience in a supervised pharmacy practice environment. In these settings, students apply didactic instruction, develop competencies, and enhance their knowledge of patient care management. These required experiences include Advanced Pharmacy Practice Experience: Internal Medicine, Advanced Practice Experience: Ambulatory Care, Advanced Practice Experience: Required Select Community, and Advanced Practice Experience: Required Select Hospital. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

PHA 7620—Advanced Pharmacy Practice Experience: Acute Care Medicine
In this advanced practice experience, students will refine skills in therapeutics, pharmacokinetics, drug information retrieval and evaluation, verbal and written communication, patient monitoring, and case presentations. Students will apply knowledge, develop competency in pharmacy practice, and enhance knowledge of therapeutic management of common diseases such as hypertension, congestive heart failure, diabetes, and renal failure. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

PHA 7640—Advanced Pharmacy Practice Experience: Ambulatory Medicine
In this advanced practice experience, students will participate in matters pertaining to drug therapy as members of a health care team. This will be done through extensive patient monitoring and obtaining medical and drug information directly from patients during interviews. Students will apply and synthesize didactic information to the activities of a pharmacist as they develop their professional maturity and judgment skills. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)
PHA 7660—Advanced Pharmacy Practice Experience: Select Community
In this advanced practice experience, students will develop and apply didactic knowledge in outpatient settings. Students will select one specialty from multiple offerings to complete this requirement. Students will be exposed to the role of a clinically oriented pharmacist in a community setting. The course focuses on technical skills in the distribution of prescriptions and the practice of pharmaceutical care. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

PHA 7680—Advanced Pharmacy Practice Experience: Select Hospital
In this advanced practice experience, students will develop skills and apply didactic knowledge in hospital settings. Students select one specialty from multiple offerings to complete this requirement. Students will be exposed to the role and responsibilities of a professionally oriented pharmacist. Students participate as active members of a health care team. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

PHA 7690—Advanced Pharmacy Practice Experience: Elective V
An additional, optional advanced practice experience, this course provides additional depth or breadth of practice knowledge and skills. It may also be used to meet the college elective requirements. **Prerequisite:** Successful completion of all didactic coursework. (0-160-4)

PHA 7700—Research Design and Statistics
Research methodology and statistics. Basic statistical concepts are covered and students are expected to understand, evaluate, and generate clinical, biomedical, and health care services research. (32-0-2)

PHA 7710—Pharmacoeconomics
Basic concepts and definitions involved in the fields of pharmacoepidemiology and pharmacoeconomics. Emphasizes identifying the principles and methodologies of pharmacoepidemiology/pharmacoeconomic analysis and the strengths and weaknesses of specific methods. Stresses application of relevant principles within critical pathways. Discusses practical examples for successful implementation of theses concepts and methods for accessing data. This course will run half a semester. (32-0-2)

PHA 7720—Physical Assessment
Teaches patient assessment for pharmacists in both ambulatory and in-patient settings. Clinical interview and physical examination techniques will be explained and demonstrated. Students practice techniques on one another under supervision. Charting, interpretation of findings, and evaluation of common clinical entities will be integrated into these activities. (15-48-2)

PHA 7730—Clinical Pharmacokinetics
Applies the concepts and techniques of biopharmaceutics and pharmacokinetics to the rational design of individualized drug dosage regimens, taking into consideration factors such as hepatic and renal impairment, effects of other diseases, and drug interactions. (64-0-4)
PHA 7740—Drug Literature Evaluation
Provides a framework to guide the student through the thought processes necessary to evaluate different types of medical information. The student is able to apply learned techniques in information retrieval, evaluation, and communication by conducting actual literature evaluations on relevant therapeutic topics. This course will run half a semester. (32-0-2)

PHA 7750—Disease Management I
The disease management courses will provide students with an overview of disease processes and treatment. Students will integrate information from discussion into their prior experience and knowledge base to expand their views and ideals and further the profession of pharmacy. This course incorporates the concepts of therapeutics and disease-state management. Emphasis is placed on developing patient-based problem-solving skills that include appropriate patient assessment, drug selection, and monitoring of drug therapy. Pharmacoeconomic and administrative concerns, development of clinical services, and controversial issues related to these disease states are also discussed. This course is taught using WebCT and compressed video technology using live lectures, integrated case studies, and exams. Topics covered in this course include the following: women's health, endocrinology, cardiovascular diseases, renal disorders, and toxicology. (64-0-4)

PHA 7770—Disease Management III
This course is a continuation of Disease Management II. The disease management courses will provide students with an overview of disease processes and treatment. Students will integrate information from discussion into their prior experience and knowledge base to expand their views and ideals and further the profession of pharmacy. This course incorporates the concepts of therapeutics and disease-state management. Emphasis is placed on developing patient-based problem-solving skills that include appropriate patient assessment, drug selection, and monitoring of drug therapy. Pharmacoeconomic and administrative concerns, development of clinical services, and controversial issues related to these disease states are also discussed. This course is taught using WebCT and compressed video technology using live lectures, integrated case studies, and exams. Topics covered in this course include the following: geriatrics, neurological and psychiatric disorders, gastrointestinal diseases, nutritional issues, pulmonology, and substance abuse/withdrawal. (64-0-4)
economic and administrative concerns, development of clinical services, and controversial issues related to these disease states are also discussed. This course is taught using WebCT and compressed video technology using live lectures, integrated case studies, and exams. Topics covered in this course include the following: infectious diseases/HIV/AIDS, transplant and immunology, and oncology. (64-0-4)

PHA 7780—Management and the U.S. Health Care System
Covers major concepts related to the structure and functioning of the U.S. health care system. Emphasizes analyzing issues associated with health care, personnel, and the way health care is organized, financed, and regulated. Examines the provision of drugs and pharmacy services in the context of the health care enterprises. Then the course focuses on the necessary supervisory skills needed to function as a manager within the health care system. (32-0-2)

PHA 7790—Research Project
Students are required to complete a research project that integrates principles learned in such courses as Research Design and Statistics, Drug Literature Evaluation, and Pharmacoeconomics. Limited lectures may be provided to guide the students as a group. Each student will work with a faculty member who will serve as the primary mentor for the project. All projects must be accepted for publication or presented at a peer-reviewed session of a state or national professional meeting. Prerequisites: Research Design and Statistics and Drug Literature Evaluation (16-96-4)

PHA 7801—Professional Development Capstone 1
The primary goal for the Professional Development Capstone course series is to assess and strengthen student knowledge and skills developed during the four-year pharmacy curriculum. In Capstone 1, students review and assess their knowledge and skills in pharmacy calculations through problem sets and patient-based case studies. Prerequisites: Completion of P1, P2, and P3 coursework Corequisite: P4 standing (16-0-0)

PHA 7802—Professional Development Capstone 2
Students demonstrate the application of medication therapy management knowledge as applied to selected disease states. The course focuses on demonstration of clinical application of pharmacotherapeutic knowledge associated with disease states commonly seen in adult internal medicine patients. Prerequisites: Completion of P1, P2, and P3 coursework Corequisite: P4 standing (16-0-0)

PHA 7803—Professional Development Capstone 3
Students review and assess their knowledge of over-the-counter medication therapies, federal and state pharmacy law, pharmacokinetics, and disease management through the use of patient-based case studies and legal cases. Prerequisites: Completion of P1, P2, and P3 coursework Corequisite: P4 standing (16-0-0)

PHA 7820/7840—Required Advanced Pharmacy Practice Experiences
Each of the four required Advanced Practice Experiences consist of four-
week, full-time (40 hours per week), off-campus experiences in a supervised pharmacy practice environment. In these clinical settings, students participate as members of a health care team to develop optimum drug therapy regimens. Required experiences include both acute care and chronic care. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

**PHA 7820—Advanced Pharmacy Practice Experience: Acute Care**
In this advanced practice experience, students will have the accessibility to interact with patients and other health care practitioners in matters pertaining to drug therapy, monitoring, evaluation, and education. Students select one specialty from multiple offerings to complete this requirement. The student will participate in the successful clinical management of acutely ill patients. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

**PHA 7840—Advanced Pharmacy Practice Experience: Chronic Care**
Interaction with patients in chronic or long-term care settings including nursing homes and ambulatory care settings. Students follow patients over time and participate as members of a health care team to encourage drug therapy through extensive patient monitoring and obtaining medical and drug information directly from patients during interviews. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

**PHA 7860/7880—Elective Advanced Pharmacy Practice Experiences**
Two elective rotations that consist of four-week, full-time (40 hours per week), off-campus experiences in a supervised pharmacy practice emphasizing nondistributive, clinical aspects of pharmacy practice in a specialty area, allowing students to specialize and obtain greater practice experience. At least one of these elective rotations must be in a direct patient care setting. Specialty rotations may include, but are not limited to, informatics, administration, critical care, geriatrics, pharmacoeconomics, pharmacokinetics, infectious disease, nutritional support, psychopharmacy, pediatrics, rheumatology, surgery, cardiology, neonatology, immunology, and clinical research where available. **Prerequisite:** Successful completion of all didactic coursework (0-160-4)

**Elective Courses**

**PHA 4221—Introduction to Molecular Medicine**
Gene defects and diseases that originate at the molecular level, basic principles of gene expression, recombinant DNA derived pharmaceuticals, and modern diagnostic and therapeutic approaches that are currently used to fight genetically determined diseases. **Prerequisite:** Biochemistry (16-0-2)

**PHA 4241—Advances in Central Nervous System Pharmacology**
Extensive review of recent developments in the understanding of CNS neurotransmitter/neuropeptide receptor systems with particular emphasis on their relevance to the actions of psychopharmacological agents. Focuses on the neuroanatomy, neurophysiology and pathophysiology of specific neurotransmitter/neuropeptide systems; examines the interaction of these systems in the expression of CNS effects. **Prerequisites:** Pharmacodynamics I, II, and III (32-0-2)
PHA 5101—Pharmaceutical Technology
This course is designed to provide a more advanced understanding of pharmaceutical industry product and process development technology than that offered in Pharmaceutics I and II. Particular emphasis is placed on the physicochemical principles and formulation rationale used in the development and manufacturing of solid dosage forms. (32-0-2)

PHA 5105—Overview of Consultant Pharmacy Practice
This course is intended to provide an overview of geriatric consulting statutes that regulate the activity of the consultant pharmacist, the HCFA survey guidelines, the types of facilities required to have a consultant pharmacist, and monitoring of patient's medication. (48-0-3)

PHA 5107—Current Topics in Pharmaceutical Sciences
Special topics will be covered by faculty members and visiting scientists. The goal of each topic is to provide the student with an understanding of, and appreciation for, current problems and procedures underlying the pharmaceutical sciences disciplines. ([16–32]-0-[1–2])

PHA 5111—Applied Pharmaceutical Kinetics
Provides comprehensive coverage of current applications of chemical kinetic theory in drug research, product development, quality control, and manufacturing activities of the pharmaceutical industry in the United States. (32-0-2)

PHA 5113—Current Topics in Pharmaceutical Sciences
Special topics are covered by faculty members and visiting scientists. The goal of each topic is to provide the student with an understanding of and appreciation for current problems and procedures underlying the pharmaceutical sciences discipline. Prerequisite: Topic dependent—see course coordinator for details (16-0-1)

PHA 5115—Advances in Drug Delivery
Current information on the science and technology of novel drug delivery systems. Emphasizes the development of controlled release formulations based on physiochemical properties of the therapeutic agent, polymer and biomaterials, and the mathematical relationships of drug disposition. (32-0-2)

PHA 5117—Cardiovascular Risk Factors
This course is designed to provide the student with background knowledge necessary for the clinical sciences, information related to cardiovascular risk factors, and the foundation from which pharmacists practice pharmaceutical care. The course reviews all major classes of cardiovascular risk factors and discusses evidence-based therapy. The rationale of prevention, lifestyle modifications, and current therapies for the treatment of common and silent cardiovascular risk factors are also addressed. Attention is given to specific clinical studies regarding new strategies to prevent and treat risk factors associated with cardiovascular disease. (32-0-2)
PHA 5119—Current Advances in Pharmaceutical Sciences
The focus of this course is on an array of pharmaceutical science topics recently highlighted by the media. Working in groups, students will prepare and give oral presentations and written reports on groundbreaking changes in the discovery, development, manufacture, and dispensing of pharmaceuticals that will directly affect the practice of pharmacy. Topics selected by the instructor will be those that have recently appeared in scientific journals that may also have received attention from new media. Active participation in class discussion is expected. (32-0-2)

PHA 5201—Biochemistry for Pharmaceutical Sciences
The focus of the first part of the course will be on structure, function, and metabolism of the carbohydrates, amino acids, lipids, and nucleotides. The course will also cover the transcription and translation of the genetic information and the control of these processes, digestion, absorption and nutrition, and advanced control topics. (64-0-4)

PHA 5203—Consumer Health Informatics and Web 2.0 in Health Care
Provides an introduction to, and overview of, consumer health informatics and Web 2.0 applications used in health care. Explores the development of consumers as ePatients and health information seekers, using tools such as patient-controlled electronic health records as well as the fluid nature of Web 2.0 in medicine. Prerequisites: PHA 4550 (32-0-2)

PHA 5215—Advanced Pharmaceutical Compounding
The course will provide advanced training in the art, science and technology of pharmaceutical compounding. The course has two components: an online component that contains 20–23 hours of didactic work, and a laboratory experience that contains four-hour laboratory exercises. Note: A special fee is required. Taught at the P*Ceutics Institute in Houston, Texas. Prerequisite: PHA 4110 (24-60-2) Transfer credit

PHA 5219—Veterinary Pharmacotherapy
Designed to equip pharmacy students with an appropriate knowledge base and skill level to facilitate competence in practicing veterinary compounding pharmacy. The course has two components: an online component that contains ten modules of 20–25 hours of didactic work, and two modules that contain 16 contact hours on compounding veterinary dosage forms. Note: A special fee is required. Taught at the P*Ceutics Institute in Houston, Texas. Prerequisite: PHA 4110 (24-16-2) Transfer credit

PHA 5223—Drugs of Abuse
This course covers types of substances abused, methods and routes of administration, the pertinent toxicokinetics, the pharmacological/toxicological mechanisms and the clinical manifestations of drug abuse. Treatment of intoxication and withdrawal, societal impact of drug abuse, legal implications, and current trends of substance abuse. Prerequisites: Pharmacodynamics I and II (32-0-2)
PHA 5225—
Principles of Neuropharmacology
Principles of membrane support and bioelectricity, synoptic transmission and recent molecular biological approaches and techniques that have revolutionized the understanding of membrane channels. (32-0-2)

PHA 5227—Pharmacoethics
Introduces the student to bioethical issues encountered in health care with emphasis on those ethical problems of particular importance to the practice of pharmacy. Students will explore issues that have arisen from advances in biotechnology, resource allocation, research using human subjects, informed consent, the function of ethics committees, and the right to privacy as they impact on the legal rights and responsibilities of patients, health providers, and government policy makers. (32-0-2)

PHA 5333—Development and Implementation of Clinical Trials
This course describes the principles, ethics, and regulatory requirements of clinical trial design and conduct for drug products, in the context of global drug development and regulatory review. (32-0-2)

PHA 5335—Drug-Induced Disease
The course will describe and discuss the most serious negative and undesired effects of drugs, as well as their impact on public health. The course emphasizes the role of pharmacists in the recognition of early signs and symptoms of life-threatening adverse drug events and in the prevention of such events. Medical terminology, understanding and discussion of case reports, and evidence-based management of most common severe adverse drug reactions are important aspects of the course. When appropriate, the role of pharmacogenomics in determining drug-induced disease will be discussed. The course is designed to acquaint students with the FDA actions and policies implemented to protect human health and with the FDA medical products reporting program and policies for product recalls and withdrawals. (16-0-1)

PHA 5387—Pharmacy Case Law
The course will consist of students presenting in-depth reviews of pharmacy law cases. The students will be required to research a pharmacy law case. The student will present the case as a live lecture to the class and be graded using criteria specified in the course syllabus. (32-0-2)

PHA 5389—
Pharmacy Law of Puerto Rico
The course covers the laws, regulation, and administrative ordinance that regulate the practice of the pharmacy profession and of the manufacturing, distribution, and dispensing of medicine in Puerto Rico. (32-0-2)

PHA 5391—
The Nuclear Pharmacy Experience
This course covers and explains what a nuclear pharmacy is and the responsibilities, activities, and knowledge required in order to function as a nuclear pharmacist. The course places emphasis on radiopharmaceuticals (radioactive medication), their mechanisms of action, dose range, method of compounding, and ultimate role in diagnosis of disease and/or therapy. (32-0-2)
PHA 5395—Pharmacy Administrative Research
Students, under the guidance and supervision of one or more pharmacy administration faculty members, will perform individual research projects. Students will be involved in both the planning and execution of the research project. (0-96-2)

PHA 5401—Current Topics in Sociobehavioral Pharmacy
Special topics, covered by faculty members and visiting scientists, provide students with an understanding of and appreciation for current issues, policies, and procedures in the sociobehavioral pharmacy environment. ([16-48]-0-[1-3])

PHA 5511—Survey of Complementary Therapies
Course provides students with information about complementary therapies, which are frequently seen or could be recommended, for various disease states. Nutritional supplements, herbal remedies, homeopathic remedies, etc; proper dosing, side effects, drug and disease state interactions; considerations in recommending complementary therapies. (32-0-2)

PHA 5563—Rounds with Pharmacy Residents
The course will expand the student’s knowledge base on selected topics covered in Therapeutics and Pathophysiology I and II, as well as other related hospital topics. This will be achieved by working through patient and hospital management problems and developing individual pharmacotherapeutic plans while taking into consideration therapeutic, economic, and operational aspects. Prerequisites: PHA 5610 (32-0-2)

PHA 5613—Pediatric Pharmacotherapy
Introduces the student to pharmacotherapy of common pediatric diseases. The course will expand on topics addressed in Therapeutics/Pathophysiology II and present more complex pharmacotherapy issues relating to pediatrics. Prerequisite: Therapeutics/Pathophysiology II (32-0-2)

PHA 5615—Women’s Health
This course covers topics of importance in women’s health and examines issues that affect women of all ages, from the early reproductive years to the late postmenopausal years. The subject matter encompasses a variety of topics, including contraception, infertility, health in pregnancy, menopausal health, and eating disorders. The role of the pharmacist in the optimal provision of drug therapy and preventive health is emphasized. Prerequisite: P3 Standing (32-0-2)

PHA 5617—Landmark Clinical Trials and Their Impact on Practice
The course will cover pivotal clinical trials that have influenced the way medications are used in clinical practice. Emphasis is placed on literature evaluation and interpretation. Students will have the opportunity to communicate this information through open discussion and formal presentations. Prerequisite: Therapeutics/Pathophysiology I Corequisite: Therapeutics/Pathophysiology II (32-0-2)
PHAZ—Introduction to Geriatric Issues in Pharmacy
Students taking this course will become familiar with the changing demographics of the elderly population and the impact this will have on health care. Students will experience the challenges of the elderly by participating in various exercises such as interviewing an elderly patient, tasting nutritional supplements, preparing a living will, and sharing stereotypes of the elderly. (32-0-2)

PHAZ—Hispanic Health
Course examines the health status and the cultural, social, economic, and environmental factors that affect the health and delivery of health care to Hispanics residing in the United States. The health status and diseases of Hispanic populations are compared to other ethnic groups. The factors associated with differences in disease frequency and specific barriers affecting access to health care are examined. Resources available to improve health and pharmaceutical care delivery to Hispanic patients are addressed. (32-0-2)

PHAZ—Adult Acute Care Medicine
Adult Acute Care Medicine will expand the student’s knowledge base on selected topics covered in Therapeutics and Pathophysiology I, as well as other related topics. The course will improve the student’s understanding of acute care medicine in the adult population, while focusing on frequent complications of common disease states and the unique way they are managed in the acute care setting. In addition, it will include a review of common procedures and devices used in the inpatient setting. Requires P3 standing. Prerequisites: PHAZ Therapeutics and Pathophysiology I, P3 Standing (32-0-2)

PHAZ—Current Topics in Ambulatory Care Practice
This course provides students with the ability to appreciate and understand the role of the pharmacist in the medication selection and use process to optimize patient outcomes in the ambulatory care setting. Basic understanding of therapeutic assessment and planning with collaborative drug therapy management of selected chronic diseases is emphasized. Prerequisite: Therapeutics/Pathophysiology I Corequisite: Therapeutics/Pathophysiology II (32-0-2)

PHAZ—Introduction to Health Education Promotion
This course provides an introduction to the field of health education promotion. It will guide participants through multiple steps in the development of health education promotion that can be implemented in their worksites or communities. (32-0-2)

PHAZ—Applied Medicinal Chemistry
The course describes the principles of structure activity relationships for several pharmacological classes of drugs. Students evaluate several case scenarios and select the most appropriate therapeutic option, relying heavily on the chemical structures of available drug products. (32-0-2)

PHAZ—History of Pharmacy
This course reveals the proud heritage of the profession of pharmacy and its service to humanity. Significant drug discoveries will be examined as well
as individuals who contributed to the evolution of pharmacy. Selected drugs and plants of historical value will be described. Evolution of pharmacy education and pharmaceutical manufacturing will be presented. (32-0-2)

**PHA 5639—Clinical Neuropsychopharmacology**
This course will incorporate lecture, classroom discussion, student presentations, and clinical monitoring of a patient with a neurological or a psychiatric disorder. The course is designed to introduce students to advanced concepts in the pharmaceutical care of the mentally ill patient. **Prerequisite:** P3 standing. (32-0-2)

**PHA 5641—Controversies in Therapeutic Drug Monitoring**
This course is a survey of current controversies in therapeutic drug monitoring. Class format will consist of discussion and debate with the participants taking sides of an issue. Topics will include issues dealing with all aspects of the therapeutic drug monitoring. Application of previous course material including pharmacokinetics and statistics is required. (32-0-2)

**PHA 5991—Research in Pharmacy Practice**
Students, under the direction of one or more pharmacy practice faculty members, will perform individual research projects. Projects may involve direct patient care or translational research (i.e., pharmacokinetics, pharmacogenomics). Semester credits must be negotiated with the adviser and approved by the department chair prior to the start of any work. Students will be involved in both the planning and execution of the research project. (0-[48–144]-[1–3])

**PHA 5993—Literature Research in Pharmaceutical Sciences**
Directed reading, evaluation, and analysis of scientific literature in the field of pharmacology, pharmaceutics, biopharmaceutics, pharmacokinetics, drug delivery systems, pharmaceutical technology, biotechnology, toxicology, and others. Students will be mentored and trained in retrieval of scientific information, building hypothesis, and writing papers and reviews. ([16-32]-0-[1-2])

**PHA 5995—Research in Sociobehavioral and Administrative Pharmacy I**
One to three semester credits are awarded on the basis of 48 laboratory hours per credit for individual work conducted by students under the direction/supervision of one or more faculty members. Students perform individual research in sociobehavioral and administrative pharmacy, including the planning, execution, and analysis of a project. (0-[48–144]-[1–3])

**PHA 5997—Research in Sociobehavioral and Administrative Pharmacy II**
One to four semester credits are awarded on the basis of 48 laboratory hours per credit for individual work conducted by students under the direction/supervision of one or more faculty members. Students perform individual research in sociobehavioral and administrative pharmacy, including the planning, execution, and analysis of a project. Students are involved in all aspects of the research project. **Prerequisite:** Research in Sociobehavioral and Administrative Pharmacy I (0-[48–192]-[1–4])
PHAC 5999—Research in Pharmaceutical Sciences
Three or four semester credits are awarded on the basis of 48 laboratory hours per credit. Individual work by undergraduate students under the direction and supervision of one or more faculty members. With the professor, students are involved in planning and executing an approved research project using basic techniques of scientific research. (0-[144–160]-[3–4])

PHAC 6301—Statistical Methods in Pharmacy
Course focusing on inferential statistics for students interested in conducting quantitative research in pharmacy. It is designed to enable students to gather data and apply experimental-design models toward improving the efficiency of pharmaceutical and health care services. Prerequisite: PHA 6300. (48-0-3)

PHAC 6441—Health Care Entrepreneurship
This course will prepare students to compete as entrepreneurs in the health care sector. The goal of the course is to equip students with the background needed to evaluate business opportunities, form management teams, raise capital, compete in markets, and manage a new venture. This course will build on the concepts presented in Pharmaceutical Marketing and Pharmacy Management. Prerequisites: PHA 4310 Pharmaceutical Marketing and PHA 6440 Pharmacy Management (32-0-2)

PHAC 7790C—Research Project Continuation
Students who are unable to complete the Research Project (PHA 7790) in one semester must register for PHA 7790C in each successive semester until successfully completing the research project. This registration ensures continued academic support and access to library resources. Prerequisite: PHA 7790 Research Project (0-48-1)

PHAC 7890—Advanced Practice Experience: Fifth Course Option
An additional, optional advanced practice experience for postbaccalaureate students, this course provides additional depth or breadth of practice knowledge and skills. It may also be used to meet the college elective requirements. Prerequisite: Successful completion of all didactic coursework. (0-160-4)
Student Organizations

Student Council
Student Council is the official voice of all students. The organization is open to all students and welcomes proposals and participation from the entire student body. Its responsibilities include collecting and expressing student opinion, dispensing funds for student activities, acting as liaison for the student body, promoting pharmacy, supporting club and class activities, and working to improve the quality of life for students at the College of Pharmacy.

Other Organizations
Many student organizations addressing various professional and practice-related interests are also open for student membership including:

- Academy of Managed Care Pharmacy
- Academy of Students of Pharmacy/American Pharmaceutical Association
- Alpha Omega Christian Fellowship International
- Alpha Zeta Omega
- American Association of Pharmaceutical Scientists
- American Society of Consultant Pharmacists
- Florida Society of Health-System Pharmacists—Student Chapter
- International Pharmacy Student Association
- Kappa Psi
- National Community Pharmacists Association—Student Chapter
- Phi Delta Chi
- Phi Lambda Sigma
- Rho Chi
- Student National Pharmaceutical Association

College of Pharmacy Faculty

Biochemistry
Chairman and Professor: R. E. Block
| Professors: E. E. Groseclose, K. V. Venkatachalam | Assistant Professor: W. G. Campbell

Microbiology
Chairman and Professor: H. Hada
| Professors: D. Burris, H. E. Laubach
| Associate Professor: K. Davis | Assistant Professor: B. Mayi

Physiology
Chairman and Professor: W. Schreier
| Professors: H. Mayrovitz, S. Taraskevich | Associate Professor: Y. Zagvazdin | Assistant Professor: L. Lyons

Pharmaceutical Sciences
Chair and Associate Professor: M. Clark

Sociobehavioral and Administrative Pharmacy
Chair and Professor: M.S. Carvajal
Pharmacy Practice

Experiential Sites
The following institutions are affiliated with the College of Pharmacy for experiential education.

- A.G. Holley State Hospital
  Lantana, Florida
- All-Med Infusion Services
  Miami Lakes, Florida
- American Lung Association
  Fort Lauderdale, Florida
- American Pharmaceutical Services
  Longwood, Florida
- American Pharmacists Association
  Washington, D.C.
- Apotex Corporation
  Weston, Florida
- APS Healthcare
  San Juan, Puerto Rico
- Arecibo, PR VA
  Arecibo, Puerto Rico
- Arnold Palmer Hospital
  for Women and Children
  Orlando, Florida
- Arthur’s Original Pharmacy
  Tamarac, Florida
- ASCP
  Alexandria, Virginia
- Aventura Hospital and Medical Center
  Aventura, Florida
- Baptist Hospital
  Miami, Florida
- Bascom Palmer Eye Institute
  Miami, Florida
- Bay Medical Center
  Panama City, Florida
- Bay Pharmacy
  St. Petersburg, Florida
- Bay Pines VAMC
  Bay Pines, Florida
- Bayamon Medical Plaza
  Bayamon, Puerto Rico
- Bennett Elementary School
  Fort Lauderdale, Florida
- Bethesda Memorial Hospital
  Boynton Beach, Florida
- Bethune Elementary
  Hollywood, Florida
- Bioscrip
  Fort Lauderdale, Florida
- Boca Pharmacy
  & Home Health Center
  Boca Raton, Florida
- Boca Raton Community Hospital
  Boca Raton, Florida
- Broward County Health Department
  Fort Lauderdale, Florida
- Broward County Public Schools
  Youth Mentoring Programs
  Fort Lauderdale, Florida
- Broward General Medical Center
  Fort Lauderdale, Florida
- Cape Coral Hospital
  Cape Coral, Florida
- Cardinal Health
  Fort Myers, Florida
- Centers for Disease Control
  Atlanta, Georgia
• Cedars Medical Center
  Miami, Florida
• Center Pharmacy
  Cape Coral, Florida
• Center Pharmacy
  St. Petersburg, Florida
• Central Florida
  Family Health Center—Alfaya
  Orlando, Florida
• Central Florida
  Family Health Center
  Sanford, Florida
• Central Florida Family
  Health Center—Hoffner
  Orlando, Florida
• Centro de Cuidado Diurno y Desarrollo
  Pediatrico San Miguel
  Ponce, Puerto Rico
• Centro de Envejeciente Cruz Espada
  Ponce, Puerto Rico
• Centro Esperanza Para la Vejez
  Cruz Espada
  Ponce, Puerto Rico
• Children’s Diagnostic &
  Treatment Center
  Fort Lauderdale, Florida
• Circles of Care
  Melbourne, Florida
• City Diplomat Pharmacy
  Fort Lauderdale, Florida
• Cleveland Clinic Hospital
  Fort Lauderdale, Florida
• Cleveland Clinic Outpatient Pharmacy
  Weston, Florida
• Clinical Pharmacology Services
  Tampa, Florida
• Columbia Hospital
  West Palm Beach, Florida
• Columbia Medical Center
  Port St. Lucie, Florida
• Commcare Pharmacy
  Fort Lauderdale, Florida
• Compounding Docs, Inc.
  Boca Raton, Florida
• ComScript/Omnicare Pharmacies
  Boca Raton, Florida
• Consejo de Salud de la Comunidad de la
  Playa de Ponce, Inc.
  Ponce, Puerto Rico
• Consultant Pharmacy Services, Inc.
  St. Petersburg, Florida
• Cooperative Feeding Program
  Fort Lauderdale, Florida
• Coral Gables Hospital
  Coral Gables, Florida
• Coral Springs Medical Center
  Coral Springs, Florida
• Covenant Hospice, Inc.
  Pensacola, Florida
• Curascript Pharmacy
  Orlando, Florida
• CVS
  Florida
• Delray Medical Center
  Delray Beach, Florida
• Doctors Hospital
  Coral Gables, Florida
• Drug Topics
  Montvale, New Jersey
• Express Care Pharmacy
  Boynton Beach, Florida
• Express Care Pharmacy
  Boca Raton, Florida
• Express RX
  Greenacres, Florida
• Fairway Elementary
  Miramar, Florida
• Family Health Center East
  Orlando, Florida
• Family Health Center
  of Southwest Florida
  Fort Myers, Florida
• Farmacia El Apotecario
  Ponce, Puerto Rico
• Farmacia El Tuque
  Ponce, Puerto Rico
• Farmacia La Aurora
  Yauco, Puerto Rico
• Farmacia La Concepcion
  Yauco, Puerto Rico
• Farmacia La Fe #2
  Ponce, Puerto Rico
• Farmacia La Fe #3
  Santa Isabel, Puerto Rico
• Farmacia Lorraine
  Ponce, Puerto Rico
• Farmacia Lourdes
  Ponce, Puerto Rico
• First Call for Help of Broward Inc.
  Fort Lauderdale, Florida
• Florida Hospital—
  Celebration Health
  Celebration, Florida
• Florida Hospital Outpatient Clinic
  Orlando, Florida
• Florida Hospital—East Campus
  Orlando, Florida
• Florida Hospital—South Campus
  Orlando, Florida
• Florida Hospital—Waterman
  Tavares, Florida
• Florida I.V. Services
  Davie, Florida
• Florida Medical Center
  Fort Lauderdale, Florida
• Florida Pharmacy Association
  Tallahassee, Florida
• Florida Poison Info Center
  Tampa, Florida
• Florida Poison Information Center—Miami
  Miami, Florida
• Food and Drug Administration—CDER—
  Office of Information Management
  Rockville, Maryland
• Food and Drug Administration—Division
  of Communications Management
  Rockville, Maryland
• Food and Drug Administration—
  Office of Generic Drugs
  Rockville, Maryland
• Food and Drug Administration—
  Office of Special Health Issues
  Rockville, Maryland
• Fort Myers VA Outpatient Clinic
  Fort Myers, Florida
• FSHP
  Tallahassee, Florida
• Gainesville VAMC
  Gainesville, Florida
• Gardens Drugs
  Palm Beach Gardens, Florida
• Good Samaritan Medical Center
  West Palm Beach, Florida
• H. Lee Moffitt Cancer Center
  Tampa, Florida
• Hallandale Adult Community Center
  Hallandale, Florida
• Harrington's Professional Arts Pharmacy
  Naples, Florida
• Health Care District of Palm Beach County
  West Palm Beach, Florida
• Health Care District of Palm Beach County—Delray
  Delray Beach, Florida
• Health Care District of Palm Beach County—Riviera Beach
  Riviera Beach, Florida
• Health First Infusion
  Riviera, Florida
• Health Park Medical Center
  Fort Myers, Florida
• Health Script Pharmacy
  Orlando, Florida
• Health South Doctors Hospital
  Coral Gables, Florida
• Health South Rehabilitation Hospital
  Miami, Florida
• Health South/Sunrise Rehabilitation Center
  Sunrise, Florida
• Helios Pain and Psychiatry Center
  Tampa, Florida
• Hialeah Hospital
  Hialeah, Florida
• HIMA
  Caguas, Puerto Rico
• Hogar San Miguel
  Ponce, Puerto Rico
• Holy Cross Hospital
  Fort Lauderdale, Florida
• Hospice of Palm Beach County
  West Palm Beach, Florida
- Hospice of the Florida Suncoast
  Largo, Florida
- Hospital Andres Grillasco
  Ponce, Puerto Rico
- Hospital Auxilio Mutuo
  San Juan, Puerto Rico
- Hospital Damas
  Ponce, Puerto Rico
- Hospital Dr. Pila
  Ponce, Puerto Rico
- Hospital Episcopal Cristo Redentor
  Guayama, Puerto Rico
- Hospital Interamericano de
  Medicina Avanzada
  Caguas, Puerto Rico
- Hospital Metropolitan
  Arecibo, Puerto Rico
- Hospital Oncologico
  San Juan, Puerto Rico
- Hospital Ramon
  Emeterio Betances
  Mayaguez, Puerto Rico
- Hospital San Cristobal
  Ponce, Puerto Rico
- Hospital San Francisco
  San Juan, Puerto Rico
- Hospital San Lucas II
  Ponce, Puerto Rico
- Hospital San Pablo
  Bayamon, Puerto Rico
- Hospital Universitario
  San Juan, Puerto Rico
- Humana Inc.
  Miramar, Florida
- Humana Health Plan
  Ponce, Puerto Rico
- Human Resource Health Center
  Miami, Florida
- Imperial Point Medical Center
  Fort Lauderdale, Florida
- Indian Health Service—Acomita
  San Fidel, New Mexico
- Indian Health Service
  Cherokee, North Carolina
- Indian Health Service
  Fort Thompson, South Dakota
- Indian Ridge Middle School
  Davie, Florida
- Indian River Memorial Hospital
  Vero Beach, Florida
- InfuPharma
  Hollywood, Florida
- Infusion Technologies, Inc.—Jacksonville
  Jacksonville, Florida
- Infusion Technologies, Inc.
  North Miami, Florida
- Infusion Technologies, Inc.—Tampa
  Tampa, Florida
- JFK Medical Center
  Atlantis, Florida
- Jackson Memorial Hospital
  Miami, Florida
- Jackson Memorial
  Long Term Care Center
  Miami, Florida
- Jackson South Community Hospital
  Miami, Florida
- James Haley VAMC Tampa
  Tampa, Florida
- Junior Achievement of South Florida
  Pompano Beach, Florida
- Junior Achievement of the Palm Beaches
  West Palm Beach, Florida
- Jupiter Medical Center
  Jupiter, Florida
- Kendall Regional Medical Center
  Miami, Florida
- Kindred Healthcare—Boca Raton
  Boca Raton, Florida
- Kindred Hospital—Coral Gables
  Coral Gables, Florida
- Kindred Hospital—Fort Lauderdale
  Fort Lauderdale, Florida
- Kindred Hospital—Hollywood
  Hollywood, Florida
- Kings Drugstore
  Okeechobee, Florida
- Kmart Pharmacy
  Puerto Rico
- KOS Pharmaceutical
  Weston, Florida
- Larkdale Elementary
  Lauderhill, Florida
- Lawnwood Pavilion
  Fort Pierce, Florida
- Lawnwood Regional Medical Center
  Fort Pierce, Florida
- Lee Memorial Hospital
  Fort Myers, Florida
- Leesburg Regional Medical Center
  Leesburg, Florida
- Lower Brule Health Center
  Pharmacy—Indian Health Service
  Lower Brule, South Dakota
- Malcolm Randall Gainesville
  VA Medical Center
  Gainesville, Florida
- Mallinckrodt/Tyco Healthcare
  Fort Lauderdale, Florida
- Mallinckrodt/Tyco Healthcare
  Miami, Florida
- Manatee Memorial Hospital
  Bradenton, Florida
- Martin Memorial Medical Center
  Stuart, Florida
- Mayaguez VA
  Mayaguez, Puerto Rico
- Mease Dunedin Hospital
  Dunedin, Florida
- Medic Pharmacy and Surgical
  Fort Lauderdale, Florida
- Medical Card Systems
  San Juan, Puerto Rico
- Medicap Pharmacies, Inc.
  Palm Springs, Florida
- Medicine Shoppe
  Dunedin, Florida
- Medicine Shoppe—Tampa
  Tampa, Florida
- Medicine Shoppe/Kings Drug Store
  Okeechobee, Florida
- Memorial Hospital
  Miramar, Florida
- Memorial Hospital of Tampa
  Tampa, Florida
- Memorial Hospital Pembroke
  Pembroke Pines, Florida
- Memorial Hospital West
  Pembroke Pines, Florida
- Memorial Primary Care
  Hollywood, Florida
- Memorial Regional Hospital
  Hollywood, Florida
- Memorial South Center
  Hollywood, Florida
- Mercy Hospital
  Miami, Florida
- MHA of Broward—I'm Thumbbody
  Lauderhill, Florida
- MHA of Broward—Listen to Children
  Lauderhill, Florida
- MHA of Broward—Thumbbody, Too
  Lauderhill, Florida
- Miami Beach Community
  Health Center
  Miami Beach, Florida
- Miami Children’s Hospital
  Miami, Florida
- Miami VA Oakland Park
  Outpatient Clinic
  Fort Lauderdale, Florida
- Miami VAMC
  Miami, Florida
- Mikimbin Pharmacy
  Miami, Florida
- Milton Medical Drug Co.
  Miami Beach, Florida
- Morales Pharmacy
  Miami, Florida
- Morton Plant Hospital
  Clearwater, Florida
- Mount Sinai Medical Center
  Miami Beach, Florida
- NACDS
  Alexandria, Virginia
- Naples Community Hospital
  Naples, Florida
- Naval Hospital
  Jacksonville, Florida
- Navarro’s
  Florida
- NeighborCare Pharmacies
  Deerfield Beach, Florida
• Neighborhood Drugs
  Tamarac, Florida
• North Broward Medical Center
  Pompano Beach, Florida
• North Florida Regional Medical Center
  Gainesville, Florida
• North Ridge Medical Center
  Fort Lauderdale, Florida
• North Shore Medical Center
  Miami, Florida
• Northside Medical Center Pharmacy
  Miami, Florida
• Northwest Medical Center
  Margate, Florida
• Nova Infusion & Compounding Pharmacy, Corp.
  Bayamon, Puerto Rico
• NSU Clinic Pharmacy
  Fort Lauderdale, Florida
• NSU—College of Pharmacy
  Fort Lauderdale, Florida
• NSU—Ponce, Puerto Rico
  Ponce, Puerto Rico
• NSU—WPB
  Palm Beach Gardens, Florida
• Oakwood Center of the Palm Beaches
  West Palm Beach, Florida
• Optima Infusion Pharmacy
  Dorado, Puerto Rico
• Option Care—Miami
  Miramar, Florida
• Option Care—Fort Myers
  Fort Myers, Florida
• Orange County Medical Clinic
  Orlando, Florida
• Orange Park Medical Center
  Orange Park, Florida
• Orlando Regional Medical Center
  Orlando, Florida
• Orlando Regional South
  Seminole Hospital
  Longwood, Florida
• Orlando Regional St. Cloud Hospital
  St. Cloud, Florida
• Orlando VA Outpatient Clinic
  Orlando, Florida
• Osceola Regional Medical Center
  Kissimmee, Florida
• Palm Beach Gardens Medical Center
  Palm Beach Gardens, Florida
• Palmetto General Hospital—Pharmacy
  Hialeah, Florida
• Park Shore Pharmacy
  Miami Shores, Florida
• Parkway Regional Medical Center
  North Miami Beach, Florida
• Petmed Express, Inc.
  Pompano Beach, Florida
• Pfizer
  Coral Springs, Florida
• Pharmacy Insurance Corporation of America
  San Juan, Puerto Rico
• PharMerica
  Pompano Beach, Florida
• PICC Line Plus
  Boynton Beach, Florida
• Pill Box Pharmacy & Surgical
  Pembroke Pines, Florida
• Pill Box Pharmacy—Weston
  Weston, Florida
• Pine Island Drugs, Inc.
  Davie, Florida
• Plantation General Hospital
  Plantation, Florida
• Post Haste Pharmacy
  Hollywood, Florida
• Premier Compounding
  Palm Beach Gardens, Florida
• Procare Pharmacy
  Miramar, Florida
• Public Health Services
  Rockville, Maryland
• Publix
  Florida
• Raulerson Hospital
  Okeechobee, Florida
• Romano's Pharmacy
  Coral Springs, Florida
• Royal Palm Compounding Pharmacy
  Wellington, Florida
• Ryder Memorial Hospital
  Humacao, Puerto Rico
• San Jorge Children’s Hospital
  Santurce, Puerto Rico
• San Juan VA Medical Center
  Bayamón, Puerto Rico
• San Lucas Hospital
  Ponce, Puerto Rico
• San Luis Pharmacy
  San Lorenzo, Puerto Rico
• San Pablo del Este (Fajardo)
  Fajardo, Puerto Rico
• Sand Lake Hospital
  Orlando, Florida
• Sandpiper Elementary School
  Sunrise, Florida
• Sarasota Memorial Hospital
  Sarasota, Florida
• Sarasota VA Primary Care Clinic
  Sarasota, Florida
• Seminole Middle School
  Plantation, Florida
• Seventh Avenue Family Health Center
  Fort Lauderdale, Florida
• Skip’s Pharmacy
  Boca Raton, Florida
• SkyeMed Pharmacy
  Pompano Beach, Florida
• South Florida State Hospital
  Pembroke Pines, Florida
• South Miami Hospital
  South Miami, Florida
• South Miami Pharmacy
  Miami, Florida
• South West Florida Medical Center
  Fort Myers, Florida
• Southern Medical Center
  Yauco, Puerto Rico
• Special Care Pharmacy Services
  San Juan, Puerto Rico
• Specialty Care Center
  Fort Lauderdale, Florida
• Specialty Pharmacy Services
  Caguas, Puerto Rico
• St. Joseph’s Hospital
  Tampa, Florida
• St. Lucie Medical Center
  Port St. Lucie, Florida
• St. Luke’s Hospital
  Ponce, Puerto Rico
• St. Luke’s Memorial Hospital
  Jacksonville, Florida
• St. Luke’s Memorial Hospital I
  Ponce, Puerto Rico
• St. Mary’s Medical Center
  West Palm Beach, Florida
• St. Vincent’s Medical Center
  Jacksonville, Florida
• Stranahan High School
  Fort Lauderdale, Florida
• Sunshine State Health Plan
  Sunrise, Florida
• Super Farmacia Juana Diaz
  Juana Diaz, Puerto Rico
• Super Farmacia Nelia
  Sabana Grande, Puerto Rico
• Super Farmacia Rina
  Guayama, Puerto Rico
• SW Florida Regional Medical Center
  Fort Myers, Florida
• Take Stock in Children
  Fort Lauderdale, Florida
• Tampa General Healthcare
  Tampa, Florida
• Target
  Florida
• Tequesta Drugs
  Tequesta, Florida
• Thomas E. Langley Medical Center
  Sunterville, Florida
• Treasure Coast Hospital
  Stuart, Florida
• Tripler Army Medical Center
  Honolulu, Hawaii
• Ulti-Med Pharmacy Services
  Miami, Florida
• United Healthcare
  Sunrise, Florida
• United States Naval Hospital—Jacksonville
  Jacksonville, Florida
• United States Public Health Services
  Rockville, Maryland
• Universal Arts Pharmacy
  Hialeah, Florida
• University Community Hospital
  Tampa, Florida
• University of Miami
  Miami, Florida
• USCG Air Station Miami Clinic
  Opa-Locka, Florida
• VA Caribbean Healthcare System
  San Juan, Puerto Rico
• VA Central Office Pharmacy
  Benefits Management SHG
  Washington, D.C.
• Vargas Healthcare Management Group
  Wellington, Florida
• VH Pharmacy
  Miami, Florida
• Vista Health Plan
  Sunrise, Florida
• Walgreens
  Florida
• Wal-Mart
  Florida
• Wal-Mart
  Puerto Rico
• Washington Elementary School
  Riviera Beach, Florida
• Wellington Regional Medical Center
  West Palm Beach, Florida
• West Boca Medical Center
  Boca Raton, Florida
• West Palm Beach Veterans Affairs Medical Center
  West Palm Beach, Florida
• Westchester General Hospital
  Miami, Florida
• Westside Regional Medical Center
  Plantation, Florida
• Winn-Dixie
  Florida

• Winships Prescription Center
  North Palm Beach, Florida
• Yamato Pharmacy
  Boca Raton, Florida
• Youth Mentoring Program
  Fort Lauderdale, Florida