Rosalind Franklin University of Medicine and Science and the College of Pharmacy reserve the right to change, at any time and without notice, their requirements, regulations, course and program offerings, fees, charges, and other matters addressed in this catalog. Rosalind Franklin University of Medicine and Science must reserve the right to modify or terminate programs described herein. However, modification of program requirements will not adversely affect those students already enrolled in a program, nor will termination of a program affect anything other than the closure of admission thereto.
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Dear Prospective Student:

Welcome to the Rosalind Franklin University of Medicine and Science College of Pharmacy! This course catalogue will provide guidance on the structure of our College and the course offerings available to future students. Please use this catalogue in conjunction with our website www.rosalindfranklin.edu/collegeofpharmacy and Student Handbook to learn about our academic policies and procedures, educational philosophy, and commitment to student life.

We are proud to be a part of a university dedicated to interprofessional healthcare practice. This team-based approach to patient care is evidenced throughout our 4-year curriculum that interweaves the fundamentals of pharmaceutical sciences with modern-day pharmacy practice, preparing graduating pharmacists to play an integral role in not only the delivery but also the management of patient therapies.

We welcome you to explore our College.

Sincerely,

Gloria E. Meredith, PhD
Dean
History
Rosalind Franklin University of Medicine and Science (RFUMS) is a medical and health sciences University dedicated to interprofessional practice and patient-centered care. In response to the growing healthcare needs of Americans, specifically those residing in northern Illinois and southern Wisconsin, RFUMS began development of the College of Pharmacy in 2007. As the fifth College at RFUMS, the College of Pharmacy opened its doors to its inaugural class in 2011, joining the Chicago Medical School, the College of Health Professions, the Dr. William M. Scholl College of Podiatric Medicine, and the School of Graduate and Postdoctoral Studies.

The University changed its name from Finch University to Rosalind Franklin University of Medicine and Science in 2004, in honor of Rosalind Franklin, PhD, a pioneer in the field of DNA research. In addition to the name change and the announcement of several new strategic initiatives, the University is currently in the midst of profound physical growth. In July 2010, construction began on the Interprofessional Education Center, home to the new College of Pharmacy. Located in the center of the RFUMS campus, the third floor of this state of the art building will be dedicated to the College of Pharmacy. Additional floors will house small group classrooms, lecture space, and simulation practice labs available to all medical and health science degree programs within the University.

Dr. Rosalind Franklin, through her pioneering work in the science of life and her unflagging perseverance, serves as a role model for our faculty and students, and represents the future of biomedical science and integrated health care. Her history mirrors our own in many ways, marked by dedication to discovery and development even in the midst of difficult times. Upon that history, her legacy guides the future of the University itself.

After over 100 years of excellence in healthcare education, the University is writing new chapters of its history. We hope you will join us in creating bold visions for an ambitious future at the College of Pharmacy. To learn more about Dr. Rosalind Franklin and Rosalind Franklin University of Medicine and Science’s dedication to her legacy, visit www.lifeindiscovery.com.

Location
The College of Pharmacy will be located on the third floor of the Health Science building and the new Interprofessional Education Center, which is scheduled to open Summer 2011. The new building is on the campus of Rosalind Franklin University of Medicine and Science, at 3333 Green Bay Road, North Chicago, IL 60064. The University is located in the Chicago-Milwaukee corridor, with access to downtown Chicago, Milwaukee, and their surrounding suburbs by car or public transportation. University students enjoy an environment rich in cultural and leisure activities, with neighboring northern Illinois and southern Wisconsin communities that boast award-winning restaurants, museums, scenic landscapes, and more. For directions and a map, visit www.rosalindfranklin.edu.
Mission and Vision of the College of Pharmacy

**Mission**
To serve the nation through excellence in pharmacy education, research, and practice, with a commitment to patient-centered interprofessional care, community service, life-long learning, and an ethos of social responsibility.

**Vision**
To be recognized as a leader in pharmacy education who is dedicated to educating future pharmacists to serve humankind and their communities with competence, compassion, and in an ethical manner.

**Core Values**
Excellence, integrity, communication, interprofessionalism, scholarship, scientific curiosity, compassion, service, and diversity.

**Equal Opportunity**
It is the policy of RFUMS not to discriminate on the basis of race, sex, sexual orientation, color, creed, religion, national origin, disability or age in admissions or employment or in any programs or activities. It is the University's intent to comply with applicable statutes and regulations, including Title IX of the 1972 Education Amendments and Section 504 of the Rehabilitation Act of 1973. Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990 both prohibit discrimination against individuals with disabilities by mandating a provision of reasonable accommodations to make limitations to what services can be provided. It is the University's goal to assist students in developing their potential in light of what is feasible and reasonable under the law. Refer to the RFUMS Student Handbook for Educational Opportunity Policies and Procedures.
Accreditation

RFUMS receives its degree-granting authority from the Illinois Board of Higher Education and is accredited through the North Central Association of Colleges and Schools.

North Central Association of Colleges and Schools
Higher Learning Commission
30 North LaSalle Street, Suite 2400
800.621.7440
312.263.0456

The College of Pharmacy seeks accreditation from the Accreditation Council for Pharmacy Education (ACPE), the sole accreditor of the Doctor of Pharmacy Program.

Accreditation Disclosure Statement

The Accreditation Council for Pharmacy Education (ACPE) accredits Doctor of Pharmacy programs offered by Colleges and Schools of Pharmacy in the United States and selected non-US sites. For a Doctor of Pharmacy program offered by a new College or School of Pharmacy, ACPE accreditation generally involves three steps: Precandidate accreditation status, Candidate accreditation status, and Full accreditation status. Precandidate accreditation status denotes a developmental program that is expected to mature in accord with stated plans and within a defined time period. Precandidate accreditation status is awarded to a new program of a College or School of Pharmacy that has not yet enrolled students in the professional program and authorizes the program to admit its first class. Candidate accreditation status is awarded to a Doctor of Pharmacy program that has students enrolled but has not yet had a graduating class. Full accreditation status is awarded to a program that has met all ACPE standards for accreditation and has graduated its first class. Graduates of a class designated as having Candidate accreditation status have the same rights and privileges of those graduates from a fully accredited program. ACPE conveys its decisions to the various boards of pharmacy and makes recommendations in accord with its decisions. It should be noted, however, that decisions concerning eligibility for licensure by examination or reciprocity reside with the respective state boards of pharmacy in accordance with their state statutes and administrative rules.

The Doctor of Pharmacy program of the Rosalind Franklin University of Medicine and Science College of Pharmacy was awarded Candidate accreditation status during the June 20-24, 2012, meeting of the ACPE Board of Directors based upon an on-site evaluation conducted April 17-19, 2012. If the program continues to develop as planned, Full accreditation of the Doctor of Pharmacy program will be considered by the Board following the graduation of students from the program.
Precandidate Status: Granting of Precandidate accreditation status brings no rights or privileges of accreditation as associated with either candidate status or fully accredited status. Precandidate accreditation status indicates only that planning has taken into account ACPE standards and guidelines and suggests reasonable assurance of moving to the next step, that of Candidate accreditation status. Since Precandidate accreditation status does not create any rights of accreditation under the ACPE standards, it is the opinion of ACPE that graduates of programs of Colleges or Schools of Pharmacy that bear Precandidate accreditation status do not meet the educational requirements for licensure.

Candidate Status: With respect to clarification of the meaning of Candidate accreditation status, graduates of a program so designed would, in the opinion of ACPE, have the same rights and privileges of those graduates from a fully accredited program. The Candidate accreditation status denotes a developmental program that is expected to mature in accord with stated plans within a defined time period. It should be underscored, however, that decisions concerning eligibility for licensure by examination or reciprocity reside with the respective state boards of pharmacy in accordance with their state statutes and administrative rules. Should Candidate accreditation status be awarded to a program, ACPE would, however, make its position known and make recommendations consistent with that position.

Student Comments to ACPE
College of Pharmacy students are encouraged to maintain an open dialogue with their professors, school administrators, and the body from which it seeks accreditation, ACPE. Should a student or prospective student feel that RFUMS and the College of Pharmacy is in violation of the ACPE standards and guidelines, he/she should contact the ACPE directly (see below):

Accreditation Council for Pharmacy Education
20 North Clark Street, Suite 2500
Chicago, IL, 60602-5109
Phone: (312) 664-3575
Fax: (312) 664-4652 or (312) 664-7008
csinfo@acpe-accredit.org

Further information about the ACPE complaint process can be found at http://www.acpe-accredit.org/students/complaints.asp.
Admissions Policy
College of Pharmacy applicants will be evaluated not only for their educational potential, but also with the aim of providing a diverse educational experience for other members of the class. The diversity that is sought in the student body includes gender, geographical, racial or national origin, cultural identity, foreign language skills, life experiences, and other unique abilities and qualities. It is the goal of the College of Pharmacy admissions policy to ensure a fair selection process that results in the matriculation of students who will be dedicated to the philosophy and practice of patient-centered care. The College recognizes that a selection process that fulfills this goal must extend beyond the consideration of formal education to include the cultural diversity of the applicant pool.

Background Check Policy
Acceptance to the College of Pharmacy is conditional pending results of a criminal background check. The background check facilitated through the PharmCAS system will be utilized for pharmacy applicants. In addition, enrolled students are required to complete a background check prior to the start of each professional year. The checks are required by the College as per agreements with experiential education rotation practice sites (see COP Student Handbook).

The following details the University policy on background checks and applies to all College of Pharmacy students.

University Background Check Policy
This policy shall apply to all applicants accepted for admission to any academic program at Rosalind Franklin University of Medicine and Science that requires a Criminal Background Check for matriculation. Departments are responsible for determining if a Criminal Background Check is a requirement based on departmental policies, accreditation requirements, or the requirements of an outside governing body (such as a professional organization).

University Background Check Policy Statements

A. Individuals to whom this policy applies will be required to have a criminal background check performed with results deemed favorable by the University as a condition of their full matriculation. An offer of admission will not be final and full matriculation not permitted until the completion of the background check with results deemed favorable by the University. An offer of admission may be denied or rescinded based upon the results of the criminal background check.

B. Background checks include:
(1) Social Security Number Validation and Verification
(2) County Criminal Records Search (past 7 years)
(3) National Criminal Records Database Search (past 7 years)
(4) National Sex Offender Database Search (past 7 years)
(5) Federal Criminal Records Search (past 7 years)
C. An accepted applicant for whom no criminal background check results have been received will be provisionally matriculated. A provisionally matriculated student may attend classes and receive financial aid funds. Students who have not submitted their criminal background check information to the University and the appropriate private vendor due to a late acceptance (defined as acceptance offered two weeks prior to the start of class or later) will be allowed to remain in the provisionally matriculated status for up to 30 calendar days after the start of class. After 30 days, if the student has not yet submitted the required information he or she will be deemed to have refused to fulfill this requirement and will be dismissed. If a finding is discovered, the provisionally matriculated status may be extended at the discretion of the CBC Review Committee, not to exceed one quarter.

D. Individuals to whom this policy applies must authorize the University to have a criminal background check performed. A Criminal Background Check Disclosure & Authorization form may be required.

E. Cost of the Criminal Background Check will be the responsibility of the applicant; however the department may choose to offset these costs.

F. If the student does not submit the required Criminal Background Check information by thirty days past the program start date, this will be considered a refusal to participate and may result in denial or rescission of admission, disciplinary action or dismissal.

G. Omission of required information or material, or false or misleading information provided by the individual on the Criminal Background Check Disclosure & Authorization or in any other communication with the University or Criminal Background Check vendor may result in denial or rescission of admission, disciplinary action, or dismissal.

H. The University will not consider criminal background check reports that were originally performed for educational or employment purposes at another institution or agency in lieu of checks performed at the request of RFUMS.

I. The University will receive the results of the criminal background check. Results will be reviewed and maintained only by members of the Criminal Background Check Review Committee.

J. If the background check report reveals a finding, the University:

   a. will provide the provisionally matriculated student with a copy of the report and the document “A Summary of Your Rights Under the Fair Credit Reporting Act” and request the individual to provide a detailed written description and explanation of the information contained in the report along with appropriate documentation. This information must be returned to the University within 10 working days of the date the communication is sent to the individual, or another date specified by the University in its communication with the individual. The University may also independently seek to obtain additional information, such as a copy of the original criminal charge.

   b. will advise the student of the name and address of the consumer reporting agency that furnished the report, and of the right to dispute the accuracy or completeness of any information contained in the report by contacting the consumer reporting agency directly.
c. will determine, on a case-by-case basis, the timeframe in which a student will be allowed to remain in a provisionally matriculated status. In no case may a student with a finding be in a provisionally matriculated status for more than one academic quarter.

K. The University, as represented by the Criminal Background Check Review Committee, will review the report, the provisionally matriculated student’s explanation and any supplementary information. The CBC Review Committee will make a determination on the findings on a case-by-case basis and will consider factors such as:

(1) the nature and seriousness of the offense,
(2) the circumstances under which the offense occurred,
(3) relationship between the duties to be performed as part of the educational program and the offense committed,
(4) the age of the person when the offense was committed, whether the offense was an isolated or repeated incident,
(5) the length of time that has passed since the offense,
(6) past employment and history of academic or disciplinary misconduct,
(7) evidence of successful rehabilitation,
(8) the accuracy of the information provided by the accepted applicant in the application materials,
(9) Disclosure Form or other materials,
(10) and any other factor it deems relevant.

L. If the CBC Review Committee deems the background check information unfavorable, or if the information received indicates that the accepted applicant may be unable to meet the requirements for completion of the program, an offer of admission may be rescinded and the student will not be allowed to fully matriculate. Unresolved criminal charges in the background check or failure by the individual to provide additional documentation as required may necessitate postponement of the University’s final decision pending the outcome of the matter.

M. If a provisionally matriculated student’s admission offer is rescinded, a student may appeal the admission decision based on the report within 10 days. Appeals must be put in writing. At the discretion of the CBC Review Committee, a student may be asked to provide additional information before making a final decision. A final response to written appeals will be made by the CBC Review Committee within 30 days of receiving the appeal. Federal Financial Aid Funds will be subject to the Title IV Refund Policy and tuition will be refunded in accordance with the Tuition Refund Policy.

N. If the University decides the Criminal Background Check results are favorable, the student status will change from provisionally matriculated to matriculated. The Registrar’s Office will be notified of the change in status in writing from a representative of the CBC Review Committee.

O. Matriculation is not a guarantee that every clinical facility will permit the student to participate in its portion of the RFUMS educational program in the future, or
that any state will accept the individual as a candidate for registration, permit, or licensure.

P. Criminal background check reports will be maintained securely, confidentially, and separately from an admission file or a student’s academic file. Criminal background check reports must be maintained for a period of at least five years after graduation or separation from the University for enrolled students, and for at least five years after the last activity involving applicants. Access to criminal background check information will be governed by the Family Educational Rights and Privacy Act (FERPA).

DEFINITIONS

Provisional Matriculation: Accepted applicant is allowed to enroll in courses, receive financial aid, and has the same rights and responsibilities as all students at RFUMS. A student with a provisional matriculation status, however, may still have the offer of admission rescinded if specific requirement for matriculation is not met (i.e., passing the criminal background check).

Matriculation: A student is fully matriculated and has passed all technical standards required for admission.

Accepted Applicant: The applicant has been offered a place in the entering class but has not yet matriculated.

Criminal Background Check Review Committee: Committee members review disclosure statements and criminal background check results. Associate Vice President of Student Affairs and Enrollment Services appoints committee members. The committee should be supported by the RFUMS legal counsel and include at least one school official who is charged with responsibility for minority, multicultural, or diversity affairs.

The following represents the workflow of the CBC Review Committee:

Criminal Background Check: Research done on an individual’s background which involve, as relevant data are accessible and to the extent permitted by law:

- Conviction information for all criminal offenses (felonies, misdemeanors) committed as an adult
- All types of adjudications
- All legal processes not yet resolved (e.g., an arrest record for offense pending court disposition, an unresolved bench warrant, a failure to appear in court.)

Finding: Criminal background check findings or self-disclosed felonies and misdemeanors. Examples include DUI, Burglary, Shoplifting, Traffic Offenses, etc.

Late Acceptance: Defined as acceptance offered two weeks prior to the start of class of later.
REFERENCES AND RELATED POLICIES

- Title IV Refund Policy (Financial Aid Office Policy and Federal Policy 34 CRF 668.22)
- Tuition Refund Policy (Business Office)
- Federal Student Financial Aid Eligibility 34 CRF 668.32
- Fair Credit Reporting Act (FCRA 15 U.S.C. 1681)
- Family Educational Rights and Privacy Act (FERPA).
- The State of Illinois Medical School Matriculant Criminal History Records Check Act (Public Act 094-0709)
- AAMC Group on Student Affairs Committee on Admissions Informational Guide to Effective Practices for Criminal Background Checks

Drug Testing

The College of Pharmacy must certify that students are negative for certain drugs prior to placement at experiential education rotation practice sites. As such, students are required to complete a drug test prior to the start of each professional year. The cost of the drug screen is the responsibility of the student. Drug test results will be shared with rotation sites upon request, and certain experiential sites may request a random drug screen during a student’s rotation (see Drug Screening Process in Experiential Manual for Details).

What Admissions Committees Look for in a Successful Applicant

Every successful applicant is expected to embody the following set of core attributes:

**Intellectual Capacity**

Evidence that the applicant can meet the scholastic requirements of the College of Pharmacy on the basis of past academic performance must be provided. This is assessed using the undergraduate grade point average, the combined undergraduate science grade point average, and standardized test scores. Other factors in this category include the quality of the undergraduate institution, the difficulty of the course load, and the trend of grades. A strong aptitude for abstract thought and conceptualization is considered a positive attribute.

**Dedication to Healthcare, Science, and Service**

Motivation to make a lifetime commitment to the practice of pharmacy can include documented interest in pharmacy, knowledge of current healthcare problems and issues, healthcare- or service-related employment, or participation in community and school service activities.

**Communication Skills**

Strong oral and written communication skills are essential attributes for a successful applicant. These skills are provided in the written application and the testimony of references and, in particular, as demonstrated during the interview process.

**Integrity**

Commitment to the highest standards of ethical and professional behavior must be demonstrated. All applicants are expected to have knowledge of basic ethical principles and to have demonstrated adherence to ethical principles in their past experiences and in the application process.
Many applicants will have past experiences, knowledge, and characteristics that can contribute to both the educational experience of their classmates and to the practice of pharmacy. The following six attributes create a diverse student population that enhances the educational experience of the class, and in turn provides for quality patient care in the future:

**Geographic Diversity**
An appropriate mix of students from the local area, the nation, and from other countries will be sought. The mix will include those who indicate a desire to serve in populations of the underserved, such as inner city residents, the financially disadvantaged, minority populations, or the uninsured.

**Race and Ethnicity**
Students from groups underrepresented in healthcare and science will provide opportunities for all students to benefit from interactions with peers with diverse experiences, personal characteristics, and backgrounds.

**Life Experiences**
A career in pharmacy requires interaction with a diverse population of patients and professionals. As such, we seek students with a wide variety of racial, ethnic, and cultural backgrounds. Experiences with other ethnicities and cultures are considered valuable, such as study abroad, involvement with multicultural organizations, or other unique life experiences.

**Teamwork**
Applicants with demonstrated ability to work well with others towards a common goal or purpose provide the potential to contribute to the educational experience of classmates and to future collaborations with other healthcare professionals and patients. Demonstration of teamwork may include participation and engagement in student organizations, service organizations, or sports teams, among others.

**Educational Background**
Applicants with degree majors outside of the sciences may contribute to the educational experience of the class and help future interaction with individuals of diverse backgrounds. Knowledge of a second language, particularly Spanish, is considered a valuable attribute for the future practice of pharmacy. Finally, applicants who possess graduate degrees, such as J.D., Masters in Public Health, Ph.D. etc., have additional skills and experiences that will be valuable both to classmates and to future colleagues.

**Leadership**
Strong leaders can contribute to their community of classmates, the University, and the surrounding area. Previous leadership experience as documented in the application and supporting documents will be considered in assessing leadership.
Research Experience
A meaningful research experience can provide an additional perspective to pharmacy practice and provide analytical tools for possible future research activities. The above is not intended to be an exhaustive list of the many attributes, factors, and conditions that are considered in the admissions process. Every applicant is evaluated individually.

Application for Admission
Application forms and materials are available online via the Pharmacy College Application Service (PharmCAS) at www.pharmcas.org. All applicants will be asked to review and electronically sign the PharmCAS Applicant’s Code of Conduct prior to applying. Individuals unwilling to commit to the Applicants Code of Conduct will be unable to apply to the Rosalind Franklin University College of Pharmacy. Questions about the PharmCAS application system and code of conduct should be addressed to: PharmCAS, Phone: 617-612-2050, info@pharmcas.org.

Inquiries regarding College of Pharmacy admissions should be addressed to:
Rosalind Franklin University of Medicine and Science Office of Admissions
3333 Green Bay Road
North Chicago, IL 60064
Phone: 847-578-3204

The following are needed to complete an application (see www.pharmcas.org for further details):

- Completed application form and official transcripts from colleges or universities previously or currently attended. Pharmacy College Admission Test (PCAT) scores must be submitted through PharmCAS.
- Two letters of recommendation from persons involved in the student’s previous educational or work experience.
- A personal interview.
- Official transcripts of the Test of English as a Foreign Language (TOEFL) if the applicant’s native language is not English and he or she has not attended an American college or university full-time or for two consecutive years.

The Admissions Office reviews all applications for completeness and forwards the completed application to the College of Pharmacy for further action.

The applicant will be notified by mail whether he or she has been accepted or rejected. The student is required to return his or her letter of acceptance and the placement fee made payable to "Rosalind Franklin University."

An orientation packet will be mailed to the student. This packet includes information and time for registration, housing information, as well as the names and addresses of department classmates.
Technical Standards

The Americans with Disabilities Act

The Americans with Disabilities Act (ADA), enacted in July of 1990, protects any individual with a physical or mental impairment that substantially limits that person in some major life activity and any individual who has a history of, or is regarded as having, such an impairment. Under the ADA, as with Section 504 of the Vocational Rehabilitation Act, universities and colleges are prohibited from discriminating against an otherwise qualified person with a disability in all aspects of academic life. Schools must make reasonable accommodations for the known physical or mental disabilities of otherwise qualified individuals. The University need not make an accommodation that would cause an undue burden. The philosophical basis of the ADA, that judging persons on their abilities and achievements rather than their potential disabilities, runs parallel to the traditional philosophy of this University.

In order to define the "essential requirements" of its curriculum, the College of Pharmacy has developed a list of Technical Standards of behavior for the undifferentiated pharmacist. In decisions on admission, evaluation, promotion, and graduation of any person, and especially an applicant or student with a disability, it is the obligation of the student to meet these minimum technical standards, with or without reasonable accommodation.

For further information on these Technical Standards and the procedures for their implementation, interested persons are encouraged to contact Steve Weiand, ADA Coordinator at (847) 578-8349 or steven.weiand@rosalindfranklin.edu.

A candidate for the PharmD degree must possess abilities and skills which include those that are observational, communicational, motor, intellectual-conceptual (integrative and quantitative), and behavioral and social. The use of a trained intermediary is not acceptable in many clinical situations in that it implies that a candidate's judgment must be mediated by someone else's power of selection and observation.

Observation

The candidate must be able to acquire a defined level of required information as presented through demonstrations and experiences in the basic and clinical sciences, including, but not limited to, information conveyed through physiologic and pharmacological images and demonstrations. Furthermore, a candidate must be able to:

- observe a patient accurately, at a distance, and close at hand, with or without standard medical instrumentation, to acquire information from written documents, and to visualize information as presented in images from paper, films, slides or video.
- interpret graphic images, and digital or analog representations of physiologic phenomenon with or without the use of assistive devices.
Such observation and information acquisition necessitates the functional use of visual, auditory, and somatic sensation while being enhanced by the functional use of other sensory modalities. In any case where a candidate's ability to observe or acquire information through these sensory modalities is compromised, the candidate must demonstrate alternate means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion. If the alternatives are acceptable, it is expected that obtaining and using such alternate means and/or abilities shall be the responsibility of the student. Costs of necessary accommodations should be reasonable and will be properly borne by the University when not the responsibility of the student or otherwise funded.

**Communication**

A candidate must be able to speak, to hear, and to observe patients by sight in order to elicit information, describe changes in mood, activity and posture, and perceive nonverbal communications. A candidate must be able to communicate effectively and sensitively with patients and their families. Communication includes speech and writing. The candidate must be able to communicate effectively and efficiently in oral and written form with all members of the health care team.

**Motor**

It is required that a candidate possess the motor skills necessary to perform basic physical assessment procedures, medication administration, medication preparation, and to utilize laboratory and diagnostic equipment. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.

**Intellectual-Conceptual (Integrative and Quantitative) Abilities**

The candidate must be able to measure, calculate, reason, analyze, integrate and synthesize. In addition, the candidate must be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures. Problem solving, the critical skill demanded of pharmacists, requires all of these intellectual abilities. The candidate must be able to perform these problem-solving skills in a timely fashion.

**Behavioral and Social Attributes**

The candidate must possess the emotional health required for full utilization of his/her intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the care of patients, and the development of mature, sensitive, and effective relationships with patients. The candidate must be able to function effectively under stress. He/she must be able to adapt to changing environments, to display flexibility, and to learn to function in the face of uncertainties inherent in the clinical problems of patients. Compassion, integrity, concern for others, interpersonal skills, interest and motivation are all personal qualities that will be assessed during the admissions and educational process.

Technical Standards can also be found online at www.rosalindfranklin.edu on the Admissions Office website.
Minimum Requirements for Admission

To be considered for admission as student, the applicant should:

- Complete the 60-semester or 87-quarter required prerequisite credits from an accredited college or university.
- Present PCAT scores. The oldest acceptable scores will be 4 years or less prior to the date of possible matriculation (e.g., students applying for August 2012 matriculation would submit scores from 2008 or more recently).
- The TOEFL and TWE are required if you are a foreign applicant who is from a country where English is not the primary language and have not attended a United States university/college for two consecutive years.

Conditional Acceptance

Acceptance may be proffered based on conditions including items such as verification of materials, successful completion of external coursework or exams, or program performance benchmarks in the program to which the person has been accepted. For example, on an individual basis, applicants with remaining prerequisite coursework may apply and their acceptance would be conditional on successful completion of that coursework. In all cases, the conditions and deadline for meeting the conditions will be clearly articulated in the acceptance letter for the program.

Non-Immigrant International Students

The College of Pharmacy is authorized under federal law to enroll non-immigrant international students. For questions regarding immigration matters, please contact the Office of Multicultural Student Services at:

Rosalind Franklin University of Medicine and Science
3333 Green Bay Road
North Chicago, IL, 60064
Phone: 847-578-8354
Tuition, Fees, and Costs
The deposit fee to hold a place in class is applied to the first quarter tuition at registration. Tuition and fees are due the first day of each term according to the University academic calendar, regardless of when classes actually start. Beginning on the first day of each quarter, a penalty fee of 7% and an interest fee calculated on a daily basis at the rate of 18% per annum is assessed to each student’s account which is not yet paid. Failure to pay tuition and fees in full by the end of the academic quarter will result in a student not being allowed to register for the subsequent quarter.

<table>
<thead>
<tr>
<th>2013-2014 Tuition and Fees*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$30,870</td>
</tr>
<tr>
<td>Fees (Lab Fee, Disability Insurance, Student Services, and Student Council)</td>
<td>$625</td>
</tr>
</tbody>
</table>

*Subject to change

For additional information about the student budget, please visit the financial aid website.

Refunds
If a student withdraws from a program before the end of the first week of classes, 100% refund of tuition is made. When withdrawal is made before the end of the second week, the refund is 75%; before the end of the third week, 50%; before the end of the 4th week, 25%. After that time, no refund is granted.

Financial Aid Information
Individuals who wish to apply for financial aid should ensure that their graduate program applications are submitted well before the enrollment deadline to allow adequate time for document processing. Students must enroll in 6 hours per quarter to be eligible for financial aid. Applications for federal student aid are available online at: www.fafsa.ed.gov and are available every February for the following academic year. The code for Rosalind Franklin University of Medicine and Science is 001659.

To meet the cost of attending the College of Pharmacy, students, spouse, and/or parents are expected to provide financial support to the extent they are able. When family resources are insufficient to meet college costs, students are encouraged to seek assistance from the following currently existing programs. Financial assistance may be available in the form of student loans including but not limited to Subsidized Federal Stafford Loans, Unsubsidized Federal Stafford Loan, Federal Perkins Loan, and Veteran Education Benefits. Please contact Student Financial Services at 847-578-3217 or visit the financial aid website for further information.
Academic Standards of Performance and their Measurement

**Academic Standards**
The College of Pharmacy expects students to pursue studies in a manner that will prepare them for excellence. The College may set standards for promotion. The College will notify students not meeting such standards.

**Non-Academic Performance Standards**
Students in the College of Pharmacy are subject to dismissal for unethical and/or unprofessional behavior in their student role. Please refer to the College of Pharmacy Handbook for details.

**General Grading System**
The University system for grading is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
<td>High Achievement</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>Above-Average Achievement</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>Average Achievement</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
<td>Failure</td>
</tr>
</tbody>
</table>

Grades without associated grade points:
- P  Pass
- F  Fail

Other status notations:
- H  Honors
- W  Withdrawal
- PP Pass Proficiency Exam
- I  Incomplete
- #  Graded at Sequence End
- IP In Progress
- NC No Credit Given
- AU Audit

**Definitions:**
- Failure (F): Denotes that a student does not demonstrate competency or does not complete the course or clerkship requirements at a satisfactory level as outlined in the syllabus.
- Honors (H): Denotes select Podiatry courses and Medical extramural courses in which a student has been given the distinction of honors.
- Withdrawal (W): The formal termination of course registration for a quarter
- Pass Proficiency Exam (PP): Denotes that student has successfully passed a proficiency exam for a specific course and is reported to the Registrar’s office.
- Incomplete (I): A temporary notation that a grade cannot be determined because the student has been unable to complete part of the course due to extenuating circumstances. See complete definition included in this policy.
- In Progress (IP): Assigned for a course that is currently in progress.
- No Credit given (NC): No credit is recorded.
Audit (AU): Enrollment for a course whereby the student does not earn academic credit. Written permission of the appropriate department chair and/or dean is required. Tuition and fees are applicable.

**Grade Point Average (GPA)**

Only courses graded on an A-F basis are used in calculating GPA. Courses taken as Pass/Fail, Pass by Proficiency, and Audit, are not included. The GPA calculation never includes transfer work from other colleges or universities.

To calculate GPA for one term:
1. Multiply the point value of the letter grade by the number of credit hours. The result is the grade points (quality points) earned.
2. Total the credit hours for the term.
3. Divide the total quality points by the total credit hours. The result is the GPA for the term.

To calculate cumulative GPA:
1. Multiply the point value of the letter grade by the number of credit hours. The result is the grade points (quality points) earned for all terms.
2. Total the credit hours from all terms.
3. Divide the total quality points for all terms by the total credit hours for all terms. The result is the cumulative GPA.

In the case of repeated courses, only the repeated course grade is included in the cumulative grade point average.

**Units of Credit**

Academic work at RFUMS is measured by units of credit. RFUMS uses the quarter system to measure the length of a term. The quarter system is generally 10-12 weeks of class including final examinations. In conjunction with the letter grade a student receives from the course instructor, units of credit give a fairly accurate evaluation of the amount of time that has been devoted to a given subject.

The number of credit hours assigned to a course is an approximation based on average student workload, entailing lecture, laboratory work and clinical/internship work.

All classes offered for credit at RFUMS are equated as a standard credit hour. One credit hour is equivalent to one hour (50 minutes) of lecture per week or two hours per week for laboratory, clinical experience, or small group discussion. Courses may last for one or more quarters. Grades are reported at the end of each course.

**Course Numbering System**

- 400 Upper-level undergraduate courses
- 500 Graduate/Professional level courses 1st year
- 600 Graduate/Professional level courses 2nd year
- 700 Graduate/Professional level courses 3rd year
- 800 Graduate/Professional level courses 4th year
- 900 Independent Study
- 999 Continuous Enrollment
Submission of Grades
All final grades must be completed and submitted to the Registrar’s Office using Web Advisor on or before the grading deadline. Final grades are due no later than 14 days after the end of the quarter. It is critical that this deadline is met. Late submission of grades results in restrictive academic actions on students that can have myriad negative impacts (financial aid, graduation, verifications, etc). Students will have access to their grades via Web Advisor approximately 4 days after submission.
Final grades for students who are eligible for graduation must be submitted one week prior to the date of graduation.
The Registrar’s Office understands the challenges sometimes associated with receiving grades within 14 days for clinical rotations. Faculty and Staff should make all efforts to meet the deadline for submission of grades.

Change of Grades
A. Once grades have been submitted to the Registrar’s Office, final grades may be changed for the following reasons:
- Calculating error in computing the grade
- Posting the wrong grade
- Replacing an “I” notation
- Posting a grade if no grade was submitted
- Re-evaluation of the previous grade
- Submission of a new grade after a remediation exam/project is satisfied
When corrections need to be made, an official Grade Change Memo must be sent directly to the Registrar’s Office.
A previous grade cannot be changed to a “W” (official withdrawal). If the student had a nonacademic emergency, he/she should file a petition for withdrawal with the Registrar's Office.
B. Changes to previously recorded grades must be submitted within one calendar year following the end of the term during which the student was registered for the course. Changes must be initiated by the instructor on a Grade Change Memo, signed by the instructor and the department chair, and then submitted to the Registrar's Office for review. A reason for the requested change must be provided before the request will be reviewed.
After one year or when the student graduates grades are considered final. Any requests for a change of grade after the one year will require documentation describing the change, and why the Grade Change Form was not filed during the appropriate period.
C. Grades will not be changed following a student’s receipt of a degree or permanent departure from RFUMS.

Incomplete “I” Policy
Incomplete “I” is not a grade, but a notation that a grade cannot be determined because the student has been unable to complete part of the course due to extenuating circumstances. Extenuating circumstances must be documented and reviewed by the Course/Clerkship Director
Incomplete “I” may be given only in the following circumstances:

- The student's work to date is passing
- Extenuating circumstance which legitimately prevents completion of required work (appropriate documentation is required)
- Required work may reasonably be completed in an agreed-upon time frame (typically by the end of the next quarter, but not to exceed one calendar year)
- The incomplete is not given as a substitute for a failing grade
- The incomplete is not based solely on a student's failure to complete work or as a means of raising his or her grade by doing additional work after the grade report time
- The student initiates the request for an incomplete grade before the end of the academic term

The following provisions for Incomplete “I” apply:

- It is the responsibility of the Instructor to establish the terms of the Incomplete. The Registrar will follow-up on the status of Incompletes on a quarterly basis. Instructors are required to submit a memo to the Registrar detailing the terms of the Incomplete when the Incomplete is assigned
- A final grade to replace the Incomplete must be submitted within one calendar year from the date the Incomplete was recorded. The course work may be completed while the student is not enrolled
- Incomplete will appear on the transcript for one year, or until a final grade is submitted to replace it. Incomplete does not calculate into the grade point average. After one year, or at the time of graduation, an Incomplete will change to ‘F’ (The F will affect the GPA).
- An Incomplete may not be considered passing for purposes of determining academic standing, federal financial aid eligibility, or other purposes
- An Incomplete should not be assigned when it is necessary for the student to attend additional class meetings to complete the course requirements. Students who receive an incomplete in a course cannot register for a future offering of the course to remove the "I" designation.
- An Incomplete is not to be assigned when the normal practice requires extension of course requirements beyond the end of a term (i.e. thesis).

A failing grade and last date of attendance should be recorded for students who cease attending class without authorization. Students who are unable to complete a course and who do not meet these circumstances should consider withdrawing from the course.

Auditing Courses

A student may elect to audit a course upon approval of the department chair and/or dean. The name of an auditing student appears on the class roster. Tuition is charged for an audited course. Audited courses will appear in the student’s official record. No credit will be received for the audited courses and the course cannot be used to determine enrollment status or federal financial aid eligibility.
Repeated Courses
The term “repeat” is used when a student retakes an entire course after failing the course the first time. The second attempt will have its own entry on the transcript along with the second grade.

If a student repeats a course, the course will be counted toward the degree. The student’s official transcript will record all courses attempted, including repeated courses. In the case of repeated courses, only the repeated course grade is included in the cumulative grade point average.

Proficiency Exam
Under certain prescribed conditions, currently registered students in good standing may receive course credit by taking an examination without formally enrolling in a course. Students may obtain a petition and a copy of the prescribed conditions from the Registrar’s Office. The petition is subject to the approval of the school, college or department responsible. The credit received for the examination may not duplicate any credit already earned toward the degree. Students may not use credit by examination to repeat any course taken previously, regardless of the grade received in that course. The final results will be reported to the Registrar’s Office, which will assign the appropriate grade. The student’s transcript will reflect “PP” Pass by Proficiency, which is not calculated in the GPA.

Concerns about Grades or Other Academic Assessments
The awarding of grades and all other academic evaluations rests entirely with the faculty. If a student has a concern relating to a particular grade or other assessment of his or her academic work, the student first should speak with the instructor of the class to understand how the grade or other evaluation was derived and to address the student’s specific concern. If the student does not feel comfortable speaking with the class instructor about the matter, he or she should bring the issue to the attention of the department chair, or his/her advising dean in order to seek advice on how best to address the issue.
If the student is unable to resolve the matter to his/her satisfaction and believes that a procedural issue is involved, the student should bring the matter to the attention of the Vice President of Academic Affairs. The Vice President will work with the student and the faculty to determine whether there has been a procedural error and, if so, take immediate steps to remedy the matter. If relevant faculty other than the instructor, together with the dean, decides that the grade or other academic evaluation was appropriate, given class assignments and circumstances, the student will be informed and the decision will be final.
Please consult the “Procedures for Questions and Concerns” in the College of Pharmacy Student Handbook for greater detail. Appeals of Course Grades/Evaluation Reports may be made per the process delineated in Section VIII Appeals in the College of Pharmacy Guidelines and Procedures For Student Assessment and Evaluation.

Transfer Credit
Graduate credit earned prior to admission to RFUMS may be eligible to be transferred into certain programs and applied towards degree requirements. Transfer of credit requires the
Approval of the program chair and dean of the college, and the Registrar’s Office by completing the Transfer Credit Request Form. They will determine whether the credit is eligible for transfer and applicable to the specific certificate or degree program. Credits accepted for transfer do not compute into any RFUMS GPA.

Credit is considered for transfer at the student’s request at the time of initial registration as a degree-seeking student. Students must submit official transcripts. Credit transfer requests from students who are admitted provisionally are not considered until they have fulfilled the conditions of their admission and have had the provisional qualifier removed from their records.

To be eligible for transfer credit, the credit must be graduate credit earned at another U.S. accredited university. The credit must have been earned within five years prior to first enrollment as an admitted student in the specific certificate or degree program, and a minimum grade of B (3.00) must have been earned. The course must be applicable toward a degree at the institution offering the course. The credits cannot have been previously applied toward a degree at another institution or RFUMS; however, up to 3 credits previously applied to a degree program at another institution may be transferred into certain programs at RFUMS.

Credit from Other Institutions

Approval must be received in writing from the department chair and the dean of the college, and submitted to the Registrar’s Office before registering at another institution. Upon completion of the course, students must arrange for an official transcript to be submitted to RFUMS so that the credits may be transferred to their RFUMS degree program. Credits are subject to all the other conditions given above for transfer credit, including limits on numbers of credits that can be taken elsewhere. Note that credits accepted for transfer do not compute into the RFUMS GPA. Permission to take a course elsewhere does not exempt a student from satisfying RFUMS degree requirements.

Advanced Standing

Advanced standing may be granted to students who provide evidence of equivalent credit courses completed in other programs at RFUMS or at another accredited university. Advanced standing can take two forms:

Exemption: Students exempted from a course do not have to take that course. However, they must replace their course with another one in order to complete their program. The program advisor will approve course substitutions.

Credit: Students given credit for a course do not have to take nor replace that course with another one in order to complete their program.

Students should request advanced standing through the Office of Admissions at the time of admission. Evaluation requests received after the time of admission will not be considered before course registration and will be delayed until the following session.

Students who have been granted exemptions and/or credits are not permitted to register for the course for which they have been granted exemption and/or credits.
Extramural Courses
Extramural courses are taken outside the University after matriculation at RFUMS, and will only be accepted for credit under one of the following circumstances:
The extramural course is an approved elective
The extramural course has been approved for remediation of a course failure

Schedule Changes (Adding/Dropping a Course)
A schedule change is defined as adding and/or dropping courses but maintaining enrollment. Not all programs allow students to alter the schedule and/or drop courses; please consult your program for availability. Students may change their class schedule through the Registrar’s Office through the first week of the quarter. Starting the second week of the quarter the student must receive approval from the dean of the program.
If a student withdraws from a course during the first week of the quarter, there will be no course or grade recorded on the transcript. A student withdrawing from a course after the first week receives a “W” for the course in which the student was enrolled. A student may withdraw from a course up to the tenth week of the quarter; however, a student may not withdraw from a course during the two weeks prior to the final examination or final project. Withdrawing after the tenth week or during the two weeks prior to the final examination will receive regular grade designations as determined by the instructor(s). Under unusual circumstances, a “W” can be assigned in the aforementioned situation if approved by the instructor and the chair of the program, and with final approval of the dean of the school or college.
All students who register for a course and neither complete the course objectives nor officially withdraw according to any one of the procedures described in this document will be graded “F” in that course and must assume all financial obligations associated with the course.
Tuition and fees after dropping one or more courses vary depending the Academic Program and/or College. Please consult with your College for any Refund Policy for Schedule Changes. Please consult the RFUMS Refund Policy for students who withdraw from a program.

Withdrawal
Withdrawal from RFUMS may be for personal reasons on the part of the student, academic reasons as determined by the program requirements, or by administrative decision. The Schedule Change policy (see policy in this document) applies to a student who withdraws.
• Voluntary Withdrawal: To withdraw from RFUMS the student must submit an official Withdrawal Form to the Registrar’s Office and complete an exit interview with his or her advisor.
• Academic Withdrawal: If a student has not made satisfactory academic progress toward fulfilling degree requirements, he or she may be withdrawn from RFUMS.
• Administrative Withdrawal: A student may be withdrawn from a particular program for reasons of a professional nature as determined by the program director, department chair, or dean.

International students who withdraw from RFUMS may face critical consequences regarding their visa status. To discuss the implications of noncompliance well in advance of processing a withdrawal, international students should contact the International Student Advisor.
Failure to attend classes or verbal notification to instructors does not constitute withdrawal. Students who drop out of a course without officially withdrawing as previously described will be credited with failure. A student failing to register for courses and/or fail to respond to official communication about their enrollment is grounds for Administrative Withdrawal.

The RFUMS Refund Policy applies to students who withdraw from a program. Please consult that policy for specific refund structure. Changes in tuition and fees for withdrawing from one (or more) course vary; please consult your program for specifics. As a reference only, below is the RFUMS Refund Policy.

- When a student withdraws from the program before the end of the first week of classes, 100% refund of tuition is made
- When withdrawal from the program is made before the end of the second week, the refund is 75%
- When withdrawal from the program is made before the end of the third week, the refund is 50%
- When withdrawal from the program is made before the end of the fourth week, the refund is 25%
- After fourth week, no refund is granted

Dismissal
Dismissal of a student from RFUMS is considered a very serious action. Dismissal of a student must follow the process defined by the College as defined in the Guidelines and Procedures for Student Assessment and Evaluation, available on the College of Pharmacy website. Dismissal from a program constitutes dismissal from the University.

Appeals of Withdrawal or Dismissal
All appeals of dismissal or withdrawal must follow the appeals process defined by the College. All appeals must pass through the Dean’s office.

Statement of Policy on Professionalism and Ethics
All students at Rosalind Franklin University of Medicine and Science are expected to exhibit professional, responsible, and ethical behavior. Students should display this behavior as students in the University, as healthcare providers in the clinical setting, and as researchers in the laboratory or clinic. All students should, therefore, possess the highest degree of personal integrity and be able to reason about ethical issues in their professional life. Students are expected to treat patients and research subjects with respect, compassion and sincerity, irrespective of race, color, creed, ethnic origin, religion, disability, gender, sexual orientation, or socioeconomic class, and to maintain strict confidentiality. Students are expected to be honest and trustworthy, to respect the property of others, and to follow the code of professional ethics appropriate to their discipline. Any departures from these standards may result in disciplinary action. See Student Conduct Policy in the RFUMS Handbook for details.
Procedures for Consideration of Violations of Professional and Ethical Standards
A student alleged to have committed ethical or professional misconduct shall be afforded due notice and process in the investigation, deliberation, and decision about such allegations and potential penalties. See Student Conduct Policy in the RFUMS Handbook for details.

Student Records
All documents and records pertaining to a student's admission and academic performance in the University are filed in the Office of the Registrar. Refer to the RFUMS Student Handbook or the Registrar website's for information regarding Students’ Personal and Academic Information.

Leave of Absence
Students in the College of Pharmacy are expected to maintain continuity and diligence in pursuing the PharmD degree. When, for any reason, a student must be absent from academic study at the University, students shall petition the College Office of Academic Affairs for a leave of absence and receive approval before leaving.

A request for leave of absence during a period of academic difficulty is authorized only after careful consideration. In general, such leave is granted only after agreement on a structured program of activities to be pursued during the leave of absence. These activities are designed to help students overcome academic difficulties; they will have to be successfully completed as a condition for re-admittance to classes.

Leaves of absence requested for reasons of health, maternity, or finances are granted as a matter of course. Upon resolution of the conditions for which leave was granted, students are readmitted to the same academic standing that existed when the leave began.

The Leave of Absence Policy can be found on the Registrar’s website.

Graduation Requirements
Students will be recommended for graduation by the College faculty upon successful completion of degree requirements, review of academic performance, and demonstration of professional standards.

Additional Policies and Resources
All students are required to follow the policies that supplement this Catalog which include, but are not limited to, the College of Pharmacy Student Handbook, the RFUMS Student Handbook, and the Guidelines and Procedures for Student Assessment and Evaluation. Please consult these documents for additional information.
Departments within the College of Pharmacy

The College of Pharmacy comprises two departments; the Department of Pharmaceutical Sciences and the Department of Pharmacy Practice. The Department of Pharmaceutical Sciences offers courses focused on the global understanding of pharmaceutical interventions (e.g., history and development of drugs, mechanism of action, drug interactions). The Department of Pharmacy Practice offers courses focused on the delivery of pharmacy services (e.g., dispensing, consultation, patient care).

A major component of the Department of Pharmacy Practice is the Office of Experiential Education (OEE). The OEE develops, manages, and assesses hands-on pharmacy practice experiences that take place at practice sites which are affiliated with our program. Simulation activities and service learning are included in experiential education.

The Introductory Pharmacy Practice Experiences comprise approximately 8% of the overall curriculum, and occur through the first 3 years of study. The Advanced Pharmacy Practice Experiences comprise the entire 4th year of study, which is approximately 27% of the overall curriculum. The Introductory and Advanced Pharmacy Practice Experiences afford students the opportunity to apply the skills and abilities learned in the classroom to the practice of pharmacy in a variety of settings.

Course descriptions for the 4 years of study are included below. Note that Department of Pharmaceutical Science course names begin with YPHS and Pharmacy Practice courses begin with YPHP. Elective courses offered in the College are designated either YELP (Pharmacy Practice) or YELS (Pharmaceutical Sciences). All other designations indicate courses offered outside of the College of Pharmacy through other Rosalind Franklin University Colleges or Schools. Please contact the Office of Academic and Student Affairs at 847-578-8831 for more information about College course offerings.
College of Pharmacy Curriculum

Fall Quarter, Year 1

YPHP 500 - Introduction to Pharmacy Practice (2 h)
Orientation to the profession of pharmacy. The history and development along with the scope of the practice of pharmacy will be discussed. The ethical and regulatory foundation for pharmacy, contemporary issues, healthcare policy, and career opportunities (licensure requirements, residency/fellowship options, etc.) will be introduced and examined in an open forum of discussion with students and faculty.
Prerequisites: Pre-pharmacy curriculum and admission to program.

YPHS 501 - Pharmaceutics I: Introduction to Pharmaceutical Sciences (3 h)
This course deals with the science of drug delivery and the chemical and physical properties of a drug and its excipients that allow it to be a medicinal. We will discuss physical pharmacy, dosage forms that enable the drug delivery, and the principles of absorption, distribution, metabolism, and excretion (ADME) of drugs.
Prerequisites: Pre-pharmacy curriculum and admission to program.

YPHS 504A - Biochemical Principles for Pharmacy (2 h [with Winter Quarter = 4h total])
Basic biochemistry as it relates organ systems and disease. This includes the principles of the thermodynamics, kinetics, structure, and regulation of biochemically significant molecules and their building blocks. Biochemical constructs (such as energy production, enzymes, membranes, DNA, RNA, proteins, anabolic and catabolic pathways, etc.) are discussed with respect to pharmaceutical treatment of human disease.
Prerequisites: Pre-pharmacy curriculum and admission to program.

YPHS 510 – Fundamentals in Physiology I (4 h)
The fundamentals of human physiology relating to basic cellular function, embryology, the cardiovascular system, respiration, the endocrine system (including reproduction), the gastrointestinal system, the renal system and hematology (including the function of white blood cells) will be presented. Physiological concepts and mechanisms will be organized according to five themes: Homeostasis & Control systems, Biological Energy Use (metabolism), Structure/Function Relationships, Communication, Pathophysiology.
Prerequisites: Pre-pharmacy curriculum and admission to program.

HMTD 515A Interprofessional Teams and Culture in Health Care (1 h)
This course is an experiential learning opportunity for students to interact in interprofessional health care teams which extends through the fall and winter of the first year. This interactive course is intended to help prepare the health care professional student to provide effective patient-centered health care through small group discussion and problem solving activities. Topics include: team interaction, communication, service learning, information literacy, quality improvement, healthcare professions, diversity in society, the impact of culture, ethnicity and religion on communication and the provision of services, disparities in the healthcare delivery system, and awareness of the impact of a provider’s own wellness and illness beliefs on the decisions he/she makes for patients. Interprofessional teams of students develop and participate in significant community based service learning projects.
Prerequisites: Pre-pharmacy curriculum and admission to program.
YPHP 506 - Pharmacy Skills Laboratory I (2h)
Orientation to the practical skills utilized in community pharmacy settings. Students will engage in a hands-on approach in learning the appropriate and safe delivery of immunizations through the American Pharmacist Association’s Pharmacist-Based Immunization Delivery Certificate Program. Students will also gain experience in the management of pharmacy workflow and application of selected pharmacy laws and regulations. The Top 200 drug products will be emphasized.
Prerequisites: Pre-pharmacy curriculum and admission to program.

YPHP 515A - Introductory Pharmacy Practice Experience I (1 h)
The student is required to complete at least 300 hours of Introductory Pharmacy Practice Experiences (IPPE) during the first three years; a minimum of 150 hours will be balanced between community pharmacy and institutional health-system settings. These experiences will permit students, under appropriate supervision and as permitted by practice regulations, to assume direct patient care responsibilities. Additional experiences in a variety of settings will be used as elective experiences during the third year, which satisfy 40 hours of the total IPPE hours.
Prerequisites: Pre-pharmacy curriculum and admission to program.

Winter Quarter, Year 1
YPHS 504B - Biochemical Principles for Pharmacy (2 h [with Fall Quarter = 4h total])
Basic biochemistry as it relates organ systems and disease. This includes the principles of the thermodynamics, kinetics, structure, and regulation of biochemically significant molecules and their building blocks. Biochemical constructs (such as energy production, enzymes, membranes, DNA, RNA, proteins, anabolic and catabolic pathways, etc.) are discussed with respect to pharmaceutical treatment of human disease.
Prerequisites: Pre-pharmacy curriculum and admission to program.

YPHS 507A - Microbiology & Immunology (4 h [with Spring Quarter = 7h total])
The first in a comprehensive series of lectures on fundamental microbiological and immunological principles. Chemical and physical properties of microorganisms are used to explain how microorganisms cause disease, and how the human host defenses combat disease-causing agents. Case studies are presented throughout the course. Symptoms of infectious diseases and immunologic disorders are emphasized.
Prerequisites: Fundamentals in Physiology I, II (YPHS 510, 511).

YPHP 504 – Health Care Systems (1 h)
This course will discuss the complexities, features, and challenges of the U.S. healthcare delivery system. Emphasis will be placed on the many roles of the pharmacist. The regulation and financing of healthcare, including methods for providing care (private vs. public plans, single payer, etc.) will be considered. The course also includes an intermediate discussion of ethics pertinent to the pharmacist’s role in healthcare delivery.
Prerequisites: Introduction to Pharmacy Practice (YPHP 500).

YPHS 502 - Pharmaceutics II: Dosage Forms (2 h)
Pharmaceutics II is the second in the series of course, describing the science of drug delivery and the dosage forms that enable the drug delivery. An introduction to pharmacokinetics will be provided as it relates to drug delivery and dosage forms. In addition, the main emphasis will be on drug delivery systems for a number of routes of administration, including novel or complex
systems. The drug development process will also be discussed. Clinical correlations will be provided during the course to reinforce the use of this information in pharmacy practice. Clinical correlations will be comprised of various teaching methodologies including cases, problem solving exercises, and other student-based active learning exercises.

**Prerequisites:** Pharmacy I (YPHP 501).

**HMTD 515B - Interprofessional Teams and Culture in Health Care (1 h)**
This is a continuation of HMTD 515A

**Prerequisites:** Pre-pharmacy curriculum and admission to program.

**YPHP 507 - Pharmacy Skills Laboratory II (2 h)**
Expansion of practical skills in the community pharmacy setting. Building on Pharmacy Skills Laboratory I, students will gain additional practical skills in this course including procurement of appropriate drug information resources, application of public health principles, communication with patients of varying health literacy levels, and advocacy for the safe and appropriate use of medications. Students will also become oriented to patient physical assessment through obtaining vital signs including pulse and blood pressure. Students will also learn fundamental microbiologic tests and their application to pharmacy practice. The Top 200 drug products will be emphasized.

**Prerequisites:** Pharmacy Skills Laboratory I (YPHP506)

**YPHS 511 – Fundamentals in Physiology II (4 h)**
This course is a continuation of YPHS 510 Fundamentals of Physiology I, and will focus on the fundamentals of human physiology relating to the nervous system and muscle physiology. Physiological concepts and mechanisms will be organized according to five themes: Homeostasis & Control systems, Biological Energy Use (metabolism), Structure/Function Relationships, Communication, Pathophysiology

**Prerequisites:** Fundamentals in Physiology I (YPHS 510).

**YPHP 515B - Introductory Pharmacy Practice Experience II (1 h)**
See YPHP 515A, Fall Quarter, Year 1

**Prerequisites:** Successful completion of previous quarter.

**Spring Quarter, Year 1**

**YPHS 507B - Microbiology & Immunology (3 h [with Fall Quarter = 7h total])**
The second in a comprehensive series of lectures on fundamental microbiological and immunological principles. Chemical and physical properties of microorganisms are used to explain how microorganisms cause disease and how the human host's defenses combat disease-causing agents. Case studies are presented throughout the course. Symptoms of infectious diseases and immunologic disorders are emphasized.

**Prerequisites:** Microbiology & Immunology A (YPHS 507A).

**YPHS 503 - Pharmaceutics III: Compounding and Calculations (3 h)**
Pharmaceutics III is the second in the series of course, describing the science of drug delivery and the dosage forms that enable the drug delivery. This is a 2 credit course. This course develops knowledge and skills and covers all aspects of pharmaceutical calculations including fundamentals of measurement and calculation, measurement systems, dosage and concentration units, isotonic solutions, electrolyte solutions, parenteral admixtures, and
calculations related to extemporaneous compounding. It also develops knowledge of sterile dosage form and delivery systems, products of biotechnology and radiopharmaceuticals. Accurate and effective pharmaceutical formulation is a key skill which must be mastered by all student pharmacists. The laboratory portion of this course will introduce students to practical aspects of extemporaneous compounding. This module teaches the basics of non-sterile compounding in the pharmacy setting. Students will be practicing exercises relating to the key dosage forms encountered during pharmacy practice.

**Prerequisites:** Pharmaceutics II (YPHS 502).

**YPHS 506 - Medicinal Chemistry (2 h)**
Selected principles of physical chemistry as related to the pharmaceutical sciences including structure-activity relationships, functional groups, drug stability & solubility, acid-base chemistry, metabolic reactions, and drug allergenicity.

**Prerequisites:** Biochemical Principles for Pharmacy (YPHS 504A, B), Microbiology & Immunology A, B (YPHS 507A, B).

**YPHP 510 – Self-Care and Non-Prescription Medications (3 h)**
The student pharmacist will learn to assist patients with the appropriate selection and use of nonprescription, as well as non-pharmacologic, treatment options for commonly encountered disease states and patient complaints. Patient assessment and education are key components to this course. Additional emphasis will be placed on patient self-monitoring, referrals, and follow-up.

**Prerequisites:** Successful completion of P1 Fall and Winter courses.

**MMTD 510 – Introduction to Bioethics & Health Law (3 h)**
This course introduces the student to the basics of ethical issues in the practice of medicine and pharmacy, as well as to recognize the controversial nature of issues such as patient’s rights. Elements of research into the foundations on which positions are taken on medical issues are stressed. Logical approaches for such positions are developed. Inquiry into the historical basis of ethical problems, appreciation for alternative positions on ethical issues, and identifying the ethical issues concomitant with the new developments in the practice of medicine and pharmacy are emphasized.

**Prerequisites:** Introduction to Pharmacy Practice (YPHP 500).

**YPHS 505 - Medical Literature Evaluation (1 h)**
This course is an introduction to understanding and interpreting medical literature. The course will review the basic structure of scientific/medical articles, examine the various sources of the literature and informatics, critically evaluate articles, and discuss the clinical application of information. Course will be part lecture and part journal club.

**Prerequisites:** Interprofessional Healthcare Teams (HMTD 500).

**YPHP 508 - Pharmacy Skills Laboratory III (1 h)**
Introduction to fundamental pharmacy calculations and expansion on patient counseling and communication. Students will use various practice and simulation devices to understand and be able to communicate effectively with patients about the appropriate and safe use of medication products including inhalers, transdermal patches, otic and ophthalmic products, and self-administered subcutaneous medications. The Top 200 drug products will be emphasized.

**Prerequisites:** Pharmacy Skills Laboratory I, II (YPHP 506, 507).
YPHP 517A - Introductory Pharmacy Practice Experience III (1.5 h)
See YPHP 515A Fall Quarter, Year 1
Prerequisites: Successful completion of previous quarter.

Summer Quarter, Year 1
YPHP 517B - Introductory Pharmacy Practice Experience IV (2.5 h)
See YPHP 515A, Fall Quarter, Year 1
Prerequisites: Successful completion of previous quarter.

Fall Quarter, Year 2
YPHP 601 - General Medicine & Infectious Disease I (4 h)
This course is the first in a series of three General Medicine courses. This course utilizes a
systems-oriented approach in focusing on the etiology, pathophysiology, diagnosis, treatment,
and prognosis for diseases, syndromes, and disorders in the following general areas:
dermatology, neurology, psychiatry and behavioral medicine, and cardiology. In addition,
infectious diseases topics pertinent to these topics will be covered.
Prerequisites: Fundamentals in Physiology I, II (YPHS 510, 511).

HPAS 528 - Research & Statistics (2 h)
The purpose of this course is to give Psychology, Nursing, Pharmacy and PA students a broad
introduction to research and statistics, with the goal of making them intelligent consumers of
published research who can practice evidenced-based medicine. Students will learn how to
identify and design high-quality research projects, as well as how to correctly analyze the results
and draw appropriate conclusions.
Prerequisites: Medical Literature Evaluation (YPHS 505).

PBBS 601A - Pharmacology (4 h [with Winter Quarter = 9 h total])
This two quarter course (PBBS 601A and 601B) is a comprehensive presentation of medical
pharmacology. The general principles of drug disposition including drug absorption, distribution,
metabolism, elimination, and pharmacokinetics are covered, as well as the pharmacodynamics
of major drug groups. Emphasis is on the mechanism of drug action, clinical uses, adverse
effects, contraindications, and clinically important drug interactions. Dosage is not emphasized
unless specifically stated by the instructor. Drugs are presented on a systems basis, and each
drug class includes practical clinical correlations.
Prerequisites: Pharmaceutics I-III (YPHS 501-503), Biochemical Principles for Pharmacy
(YPHS 504), and Microbiology & Immunology A and B (PBBS 505A and B).

YPHP 606 - Pharmacy Skills Lab IV (2 h)
Orientation to physical assessment, clinical laboratory testing, and health-systems pharmacy.
Students will learn appropriate technique in physical assessment including proper reporting of
findings. Illustrative case discussions will emphasize the importance of the interpretation and
application of the physical exam and chemistry tests in order to monitor and adjust medication
therapy. Students will be introduced to home diagnostics and point of care testing.
Prerequisites: Pharmacy Skills Lab I, II, III (YPHP506, 507, 508).
YPHP 615A - Introductory Pharmacy Practice Experience V (2 h)
See YPHP 515A, Fall Quarter, Year 1
Prerequisites: Successful completion of previous quarter.

YPHP 620 - Pharmacotherapy I (4 h)
The clinical application of drug therapy is discussed at an advanced level using a systems-based approach. Topics are sequenced with those in the General Medicine and Infectious Disease course series. Using evidence-based medicine, selection of drug therapy and appropriate monitoring are discussed to optimize patient outcomes in a safe, cost-effective manner.
Prerequisites: Fundamental of Physiology I, II (YPHS 510, 511), Microbiology & Immunology (YPHS 507A, B), Self–Care and Non-Prescription Medications (YPHP 510), Biochemical Principles for Pharmacy (YPHS 504A, B)

YPHS 620A - Life-long Learning (credit awarded in Spring)
To introduce students to the process of learning about new developments in science, medicine and pharmacy that happens outside of the classroom or their immediate practice environment.
Prerequisites: Second year status.

Winter Quarter, Year 2
YPHP 602 - General Medicine & Infectious Disease II (4 h)
This course is the second in a series of three General Medicine courses. This course utilizes a systems-oriented approach in focusing on the etiology, pathophysiology, diagnosis, treatment, and prognosis for diseases, syndromes, and disorders in the following general areas: hepatobiliary disorders, gastroenterology, fluids/electrolytes/acid-base disorders, otolaryngology and ophthalmology, rheumatology and orthopedics. A variety of infectious diseases topics pertinent to the above areas will also be discussed.
Prerequisites: General Medicine & Infectious Disease I (YPHP 601).

PBBS 601B - Pharmacology (5 h [with Fall Quarter = 9 h total])
See Pharmacology (PBBS 601A), Fall Quarter, Year 2
Prerequisites: Pharmacology (PBBS 601A).

YPHS 600 - Basic Pharmacokinetics and Pharmacodynamics (3 h)
This course presents the basic fundamental principles underlying drug action in the body. Pharmacokinetics describes the relationship of drug dose and the time course of drug presence in the body, including the concepts of drug half-life, steady state concentration, absorption, distribution, metabolism and excretion. Processes that influence the pharmacokinetics of drugs, including formulation, physicochemical, physiological, pharmacological and pathological factors will be discussed. Pharmacodynamics presents the effects of drug action at the receptor site and includes the concepts of agonist, antagonist, competitive and non-competitive inhibition, and therapeutic effect. The use of mathematical equations to describe the pharmacokinetic concepts and principles of drug action are introduced and applied to dosage regimen determinations. The course teaches the fundamentals of calculations necessary to determine drug loading dose, maintenance dose, and dosing interval and prepares the student for YPHS 604 Clinical Pharmacokinetics and Pharmacodynamics.
Prerequisites: Pharmacology (PBBS 601A), Biochemical Principles for Pharmacy (YPHS 504A, B).
YPHP 607 - Pharmacy Skills Lab V (2 h)
Continuation of practical applications in health-systems pharmacy. Sterile technique and IV compounding will be introduced. Students will also use the hands-on approach to learn about key aspects of health-systems pharmacy including distribution of drug products, formulary management, pharmacy and therapeutics committees, electronic medical records, and medication reconciliation. Laws, regulations, and accrediting agencies for health-systems will be discussed. Students will continue to learn and apply chemistry and physical exam findings in the management of drug therapies.
Prerequisites: Successful completion of Pharmacy Skills Lab I, II, III, IV (YPHP506, 507, 508, 606).

YPHP 615B - Introductory Pharmacy Practice Experience VI (2 h)
See YPHP 515A, Fall Quarter, Year 1
Prerequisites: Successful completion of previous quarter.

YPHP 621 - Pharmacotherapy II (3 h)
The clinical application of drug therapy is discussed at an advanced level using a systems-based approach. Topics are sequenced with those in the General Medicine and Infectious Disease course series. Using evidence-based medicine, selection of drug therapy and appropriate monitoring are discussed to optimize patient outcomes in a safe, cost-effective manner.
Prerequisites: Fundamental of Physiology (YPHS 510/511), Microbiology & Immunology (YPHS 507A/B), Self-Care and non-Prescription Medications (YPHP 510), Biochemical Principles for Pharmacy (YPHS 504A/B)

YPHS 620B - Life-long Learning (credit awarded in Spring)
To introduce students to the process of learning about new developments in science, medicine and pharmacy that happens outside of the classroom or their immediate practice environment.
Prerequisites: Second year status.

Spring Quarter, Year 2
YPHP 603 - General Medicine & Infectious Disease III (4 h)
This course is the third in a series of three General Medicine courses. This course utilizes a systems-oriented approach in focusing on the etiology, pathophysiology, diagnosis, treatment, and prognosis for diseases, syndromes, and disorders in the following general areas: hepatobiliary disorders, gastroenterology, fluids/electrolytes/acid-base disorders, otolaryngology and ophthalmology, rheumatology and orthopedics. A variety of infectious diseases topics pertinent to the above areas will also be discussed.
Prerequisites: General Medicine & Infectious Disease I, II (YPHP 601, YPHP 602).

YPHP 604 - Clinical Pharmacokinetics and Pharmacodynamics (2 h)
This course expands upon the theoretical concepts explored in YPHS 600 Basic Pharmacokinetics and Pharmacodynamics. This course will focus on common clinical pharmacokinetics/pharmacodynamic principles and their application to specific drug therapy regimen design, monitoring, and management.
Prerequisites: Basic Pharmacokinetics and Pharmacodynamics (YPHS 600).
YPHP 608 - Pharmacy Skills Lab VI (2 h)  
This course is designed to be a continuation of the material covered in YPHP 606 and YPHP 607. Students will continue to learn appropriate technique and application of laboratory and physical assessment findings in the management of drug therapies.  
**Prerequisites:** Successful completion of Pharmacy Skills Lab I, II, III, IV, V (YPHP 506, 507, 508, 606, 607).

YPHS 609 – Introduction to Pharmacogenomics and Molecular Biology (2 h)  
This course will introduce students to important principles of human genetics and molecular biology that apply to contemporary and future pharmaceutical practice. Topics covered include basic concepts in human genetics and genomics, information flow in biological systems, including the structure of DNA, RNA, an overview of state-of-the-art technologies including cloning, recombinant DNA, PCR and microchips. The course will include some classical case studies as well as discussions of ethical challenges in the rapidly growing area of personalized drug therapy based on molecular genetic information.  
**Prerequisites:** Biochemical Principles for Pharmacy (YPHS 504).

YPHP 617 - Introductory Pharmacy Practice Experience VII (2 h)  
See YPHP 515A, Fall Quarter, Year 1  
**Prerequisites:** Successful completion of previous quarter.

YPHP 622 - Pharmacotherapy III (3 h)  
The clinical application of drug therapy is discussed at an advanced level using a systems-based approach. Topics are sequenced with those in the General Medicine and Infectious Disease course series. Using evidence-based medicine, selection of drug therapy and appropriate monitoring are discussed to optimize patient outcomes in a safe, cost-effective manner.  
**Prerequisites:** Fundamental of Physiology (YPHS 510/511), Microbiology & Immunology (YPHS 507A/B), Self-Care and non-Prescription Medications (YPHP 510), Biochemical Principles for Pharmacy (YPHS 504A/B)

YPHS 620C - Life-long Learning (1 h)  
To introduce students to the process of learning about new developments in science, medicine and pharmacy that happens outside of the classroom or their immediate practice environment.  
**Prerequisites:** Second year status.

**Fall Quarter, Year 3**  
YPHS 704 - Pharmaceutical Biotechnology (2 h)  
The use of various technologies in the development of biological therapies. The discussion includes current and future approaches, including monoclonal antibodies, novel pharmaceutical administration (e.g., stents), genetic modification, nanotechnologies, therapeutic proteins and biological response modifiers, etc.  
**Prerequisites:** Biochemical Principles for Pharmacy (YPHS 504), Introduction to Pharmacogenomics and Molecular biology (YPHS 609), Medicinal Chemistry (YPHS 506).

YPHP 709 - Health Care and Pharmacy Law (3 h)  
This course will begin with an overview of the federal and state systems of government with an emphasis on how laws are made and executed as well as cases adjudicated within those two
systems. The course will then provide a more detailed analysis of various federal and state laws that impact the practice of pharmacy in the United States along with a discussion of the public policy reasons and debates underlying those laws. The laws and practices of the states of Illinois and Wisconsin will be used as the primary examples of the types of laws and practices that generally exist within the individual states.

**Prerequisites:** Health Care Systems (YPHP 504).

**YPHP 710 - Pharmacotherapy IV (2 h)**
The clinical application of drug therapy is discussed at an advanced level for various disease states and specific patient populations. For disease states not previously encountered in the General Medicine and Infectious Disease course series, the pertinent epidemiology, pathophysiology, clinical presentation, basic diagnostic evaluation will be presented. The course will focus on using evidence-based medicine for the appropriate selection of drug therapy and monitoring in order to optimize patient outcomes in a safe, cost-effective manner.

**Prerequisites:** Pharmacotherapy I, II, III (YPHP 620, 621, 622); General Medicine & Infectious Disease I, II, III (YPHP 601, 602, 603); Basic Pharmacokinetics and Pharmacodynamics (YPHS 600), Clinical Pharmacokinetics and Pharmacodynamics (YPHP 604).

**YPHP 706 - Pharmacy Skills Lab VII (1 h)**
Integration and application of skills into pharmacy practice. Students will improve their skills in writing SOAP notes, developing patient-care plans, and providing successful drug-therapy related presentations to peers. Students will begin to evaluate and apply evidence based medical literature to clinical practice.

Development of skills that will be vital for successful completion of advanced pharmacy practice experiences (APPEs) will be a focus of this course.

**Prerequisites:** Successful completion of Pharmacy Skills Lab I, II, III, IV, V, VI (YPHP 506, 507, 508, 606, 607, 608).

**YPHP 714 - Pharmacoeconomics (2 h)**
Factors underlying the pricing of drugs (development, testing, licensing, manufacturing, marketing, etc.), and translation to healthcare costs. The macro/micro-economics of various aspects of pharmacy practice are discussed, including the impact of such pricing on hospital, retail, and other environments. Financial aspects of pharmacy management are also presented, including personnel and insurance costs, fixed and recurring expenses, etc. Includes drug reimbursement, Medicare-Medicaid, managed care organizations (Insurance, formularies, etc.), formulary management, and investments.

**Prerequisites:** Health Care Systems (YPHP 504) and Introduction to Pharmacy (YPHP 500).

**YPHP 715A - Introductory Pharmacy Practice Experience VIII (1 h)**
See YPHP 515A, Fall Quarter, Year 1

**Prerequisites:** Successful completion of previous quarter.

**YPHS 720A - Life-long Learning (credit awarded in Spring)**
To introduce students to the process of learning about new developments in science, medicine and pharmacy that happens outside of the classroom or their immediate practice environment.

**Prerequisites:** Third year status.
Winter Quarter, Year 3

YPHP 711 - Pharmacotherapy V (2 h)
The clinical application of drug therapy is discussed at an advanced level for various disease states and specific patient populations. For disease states not previously encountered in the General Medicine and Infectious Disease course series, the pertinent epidemiology, pathophysiology, clinical presentation, basic diagnostic evaluation will be presented. The course will focus on using evidence-based medicine for the appropriate selection of drug therapy and monitoring in order to optimize patient outcomes in a safe, cost-effective manner. **Prerequisites:** Pharmacotherapy I, II, III (YPHP 620, 621, 622); General Medicine & Infectious Disease I, II, III (YPHP 601, 602, 603); Basic Pharmacokinetics and Pharmacodynamics (YPHS 600), Clinical Pharmacokinetics and Pharmacodynamics (YPHP 604).

YPHP 703 - Pharmacy Management and Hospital Practice (3 h)
Presents factors and issues involved in pharmacy management. Includes pharmacy business plan (contracts, proposals), FDA regulatory requirements including drug security and records, marketing of practice and products, financial accounting, employee performance reviews, policies for promotion, drug, and inventory maintenance, and EEOC requirements. This course also focuses on the practice of pharmacy in the hospital setting. General aspects of hospital administration and policy as well as unique features of clinical rounding and formulary experiences are examined. Students will engage in discussions about the electronic medical record and other current and future technologies likely to be utilized as in-hospital pharmacists. **Prerequisites:** Health Care Systems (YPHP 504) and Pharmacoconomics (YPHP 714).

YPHS 705 - Basic Spanish for Pharmacists (2 h)
This course teaches basic Spanish with an emphasis on medical terms and phrases commonly used to describe illness and discomfort. Language used to counsel patients in the appropriate administration of drugs, cautions required, possible side effects, and other drug therapy issues commonly encountered by the pharmacist will be a focus of the course. **Prerequisites:** Culture in Health Care (HMTD 501).

YPHP 713 – Pharmacogenomics (2h)
Personalized therapeutics with minimal adverse effects, based on individual genetic characteristics are discussed. The rationale of drug design based on genetic polymorphisms is presented to illustrate how knowledge of the genome can be used to develop personalized targeted therapies. **Prerequisites:** Introduction to Pharmacogenomics and Molecular Biology (YPHS 609).

YPHP 707 - Pharmacy Skills Lab VIII (1 h)
This course will focus on continued development of skills learned in Pharmacy Skills Lab VII with a focus on advanced and complicated case studies. Students will continue to develop medical literature evaluation skills. **Prerequisites:** Successful completion of Pharmacy Skills Lab I, II, III, IV, V, VI, VII (YPHP506, 507, 508, 606, 607, 608, 706).

YPHS 720B - Life-long Learning (credit awarded in Spring)
To introduce students to the process of learning about new developments in science, medicine and pharmacy that happens outside of the classroom or their immediate practice environment. **Prerequisites:** Third year status.
YPHP 715B - Introductory Pharmacy Practice Experience IX (1 h)
See YPHP 515A, Fall Quarter, Year 1
**Prerequisites**: Successful completion of previous quarter.

**Spring Quarter, Year 3**

**MMTD 509 - Epidemiology (2 h)**
This course acquaints the student with the basic concepts of biostatistics and introductory Clinical Epidemiology. Elements of research design are stressed so that the student is able to critically evaluate research literature. Practice in simple statistical skills and analysis is included.
**Prerequisites**: Medical Literature Evaluation (YPHS 505) and Research and Statistics (HPAS 528).

**YPHP 712 – Pharmacotherapy VI (2 h)**
The clinical application of drug therapy is discussed at an advanced level for various disease states and specific patient populations. For disease states not previously encountered in the General Medicine and Infectious Disease course series, the pertinent epidemiology, pathophysiology, clinical presentation, basic diagnostic evaluation will be presented. The course will focus on using evidence-based medicine for the appropriate selection of drug therapy and monitoring in order to optimize patient outcomes in a safe, cost-effective manner.
**Prerequisites**: Pharmacotherapy I, II, III (YPHP 620, 621, 622); General Medicine & Infectious Disease I, II, III (YPHP 601, 602, 603); Basic Pharmacokinetics and Pharmacodynamics (YPHS 600), Clinical Pharmacokinetics and Pharmacodynamics (YPHP 604).

**YPHP 700 - Current Topics in Pharmacy (1 h)**
This seminar course consists of multiple small groups, in which each group reads and discusses a variety of topical papers relevant to the scope of pharmacy practice. Students present individually and in teams.
**Prerequisites**: Medical Literature Evaluation (YPHS 505), Research and Statistics (HPAS 528), Health Care and Pharmacy Law (YPHP 709), Pharmacoeconomics (YPHP 714), Non-prescription Medications (YPHP 713), and Pharmacology A and B (PBBS 601A and B).

**HMTD 551 - Leadership in the Healthcare Environment (3 h)**
This inter-professional course is designed to introduce the student to the concept of leadership within the healthcare environment. Leadership skills learned as part of previous service activities, sports, or academic study will be applied to the healthcare setting using case studies and small group discussion. The course begins with an overview of leadership styles, and then continues with more specific topics such as building teams, evaluating others, managing finances, managing risk, marketing of healthcare, and healthcare policy. As an outcome of this interdisciplinary course, it is intended that students will discuss the similarities and differences of leadership within each of their professional fields, and learn that each person will have the potential to be in a leadership role of some type after graduation.
**Prerequisites**: Health Care Systems (YPHP 504), Pharmacoeconomics (YPHP 714), General Medicine & Infectious Disease I, II, and III (YPHP 601, 602, 603).

**YPHP 708 - Pharmacy Skills Lab IX (1 h)**
This course will continue to allow students to develop their pharmacy skills in order to prepare them for their advanced pharmacy practice experience. Students will have the opportunity to discuss ethical dilemmas commonly seen in clinical practice as well as discussing the importance of cultural competency.
**Prerequisites**: Successful completion of all former pharmacy skills labs.
YPHP 715C - Introductory Pharmacy Practice Experience X (1.5 h)  
See YPHP 515A, Fall Quarter, Year 1  
**Prerequisites:** Successful completion of previous quarter.

YPHS 720C - Life-long Learning (1 h)  
To introduce students to the process of learning about new developments in science, medicine and pharmacy that happens outside of the classroom or their immediate practice environment.  
**Prerequisites:** Third year status.

**Year 4**  
YPHP 801 – 806 - Advanced Pharmacy Practice Experience  (9 h each [=54h total])

Each student will have six 6-week experiences throughout the fourth year that satisfy 1440 hours of the experiential curriculum. Each experience is allotted nine credit hours and provides students an opportunity to apply and advance the knowledge, skills, and attitudes attained throughout their first three years of the program. These experiences include:

- Community Pharmacy
- Health-System Pharmacy
- Inpatient/Acute Care
- Ambulatory Care
- Two Elective Experiences

**Prerequisites:** Successful completion of P3 year and all introductory pharmacy practice experience requirements.
ELECTIVES

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<tr>
<th>Course Title</th>
<th>Course Number</th>
<th>Effective Date</th>
<th>Credit Hours</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>Landmark Trials</td>
<td>YELP 700</td>
<td>Fall 2013</td>
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<td>Pass/Fail</td>
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<td>Students will have the chance to apply the skills that they have learned in Research and Statistics and Medical Literature Evaluation. Each week, we will take an in-depth look at a landmark clinical trial which has shaped the current practice of medicine. Therapeutic topics will mirror topics covered in Pharmacotherapy. Each week, students will critically read the trial prior to class. The class period will be dedicated to discussing pertinent aspects of the study including: need for the trial, trial methodology, analysis, and impact on clinical practice. Concepts will be reinforced through case based applications and discussion.</td>
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<tr>
<td>Critical Care and Medical Emergencies</td>
<td>YELP 701</td>
<td>Fall 2013</td>
<td>2</td>
<td>A, B, C, F</td>
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<td>This course will introduce students to a wide variety of topics related to critical care and acute medical emergencies. Topics and content will focus on drug therapy and the role of the pharmacist within an interprofessional critical care team. The course format will include didactic lectures, hands-on activities, and class-based discussions.</td>
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<td>Toxology</td>
<td>YELP 702</td>
<td>Winter 2013</td>
<td>2</td>
<td>A, B, C, F</td>
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<td>Pharmacists play an important role in the treatment of drug overdose. This course will address the provision of care in the “poisoned patient”, including clinical presentation, assessment, and treatment of common drug, chemical, and biologic agent overdoses. The format includes lectures by faculty and case discussions.</td>
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<tr>
<td>Advanced Diabetes Management</td>
<td>YELP 703</td>
<td>Winter 2013</td>
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<td>This elective course provides concentrated and in-depth knowledge of management of diabetes through hands-on learning in lecture and small group settings. The topics include medical nutrition, long-term complications, insulin dosing, operating insulin pumps, troubleshooting parenteral medication and glucometer devices, use of e-tools for DM management, social and behavioral issues associated with diabetes, management of gestational diabetes, management of pediatric diabetes, and complementary and alternative medicine in diabetes. Students will be required to participate in a week long experience as a diabetic patient, in which they will self-administer “insulin” injections and monitor blood glucose using a glucometer.</td>
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<td>Mental Health</td>
<td>YELP 704</td>
<td>Spring 2014</td>
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<tr>
<td>This course will address advanced topics in mental health and</td>
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neuropsychiatry as it relates to pharmacotherapeutic intervention. The specialized role of the pharmacist in the treatment of patients with psychiatric conditions will be discussed, including contributions to mental health advocacy. Students will gain a historical perspective on the treatment of psychiatric patients, evaluate key clinical drug trials as they relate to current treatment guidelines and advancements in psychiatric treatment, and discuss management of psychiatric conditions not covered in the pharmacotherapy series. Examples of topics discussed in this elective that are not covered in the core curriculum may include personality disorders, child psychiatry, geriatric psychiatry, forensic psychiatry, or others based on the interest of each class. This course will utilize a combination of lecture, small group activities, case-based learning, discussion, debate, and student presentation.

Advanced Pharmacoeconomics

This course is designed to provide the student with the advanced concepts of economics and market forces in general. A detailed discussion on Pharmacoeconomics as it relates to patient care. Overview of economic principles, which should enhance the understanding of the theory underlying pharmacoeconomic analysis, will be integrated in this course. A special emphasis will also be placed on applying the economic evaluations and quality of life concept to improve the allocation of limited health care resources. Upon completion of the course, the student should be able to apply the basic economic and pharmacoeconomic principles to make therapeutic and resources allocation decisions.

Marijuana: Its History, Chemistry, Pharmacology, Medical Uses, Politics

Marijuana is being approved for medical use in an increasing number of states. This course will examine the history, chemistry, pharmacology, and medical aspects of this drug, along with the politics which are an inherent part of any drug with recreational properties.

Structure-Activity Relationships of Drugs

This course will examine how systematic alterations of chemical structure can be used to design and optimize drug molecules. Following a series of introductory lectures, students will select a class of drugs, investigate published structure-activity relationships, and give a presentation summarizing their findings.

Case Studies In Microbiology and Infectious Disease

This microbiology course utilizes classic case studies to cover some unusual cases and many common but important topics, including resistant strains, infections in special populations, emerging infectious diseases, and infectious disease cases of importance to pharmacists.
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<td>15 QUARTER HOURS</td>
<td>18 QUARTER HOURS</td>
<td>11 QUARTER HOURS + ELECTIVES</td>
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<td>Pharmacology, Introduction to Pharmacy</td>
<td>General Medicine &amp; Infectious Disease I</td>
<td>Pharmacotherapy IV</td>
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<td>YPHP 601</td>
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<td>APAS 52V</td>
<td>Research &amp; Statistics</td>
<td>YPHP 710</td>
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<td>YPHP 625</td>
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<td>Health Care and Pharmacy Law</td>
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<td>PBB 60 A</td>
<td>Pharmacology</td>
<td>YPHP 709</td>
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<tr>
<td>YPHP 629</td>
<td>4 h</td>
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<td>YPHP 741</td>
<td>Life-Long Learning Seminar</td>
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<tr>
<td>YPHP 706</td>
<td>Pharmacy Skills Lab VII</td>
<td>Spring credit</td>
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<td>YPHP 615A</td>
<td>IPPE V</td>
<td>IPPE VIII</td>
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<tr>
<td>YPHP 715A</td>
<td>1 h</td>
<td>Electives (see below)</td>
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