
LIU Pharmacy

2021 - 2022 Professional Program & Graduate Catalog

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Notice to Students: The information in this publication is accurate as of September 1, 2021. However, circumstances may require that a given course be withdrawn or alternate offerings be made. Therefore, LIU reserves the right to amend the courses described herein and cannot guarantee enrollment into any specific course section. All applicants are reminded that the University is subject to policies promulgated by its Board of Trustees, as well as New York State and federal regulations.

The University reserves the right to effect changes in the curriculum, administration, tuition and fees, academic schedule, program offerings, modes and methods of instruction, and other phases of school activity, at any time, without prior notice. The University assumes no liability for interruption of classes or other instructional activities due to fire, flood, strike, war, epidemic, government action, or other force majeure. The University expects each student to be knowledgeable about the information presented in this bulletin and other official publications pertaining to his/her course of study and campus life. For additional information or specific degree requirements, prospective students should call the Office of University Admissions. Registered students should speak with their Success Coach.

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Accreditation and Program Registration

Long Island University is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104; 267-284-5000; website: www.msche.org. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and by the Council for Higher Education Accreditation. The degree and certificate programs are approved and registered by the New York State Department of Education.

ABOUT LIU PHARMACY

Arnold & Marie Schwartz College of Pharmacy and Health Sciences

Over 125 Years of Tradition

The Arnold & Marie Schwartz College of Pharmacy and Health Sciences (LIU Pharmacy) was established in 1886 as the "Brooklyn College of Pharmacy" by the Kings County Pharmaceutical Society. The society's goals in establishing the college were "...to improve the science and art of pharmacy by diffusing knowledge among the apothecaries and druggists, fostering pharmaceutical literature, developing talent for pharmaceutical pursuit and investigation, and stimulating discovery and invention in the several departments of the drug business."

In 1929, the Brooklyn College of Pharmacy affiliated with Long Island University, one of the largest independent universities in the United States, and in 1976 Pharmacy physically moved onto the LIU Brooklyn campus. LIU Pharmacy attracts students who strive to grow personally, intellectually, and professionally in pharmacy and related fields.

The college serves as an urban leader in pharmacy education through its pursuit of excellence and innovation in teaching, scholarship, and service. Forging alliances and partnerships with healthcare providers and the pharmaceutical industry, the college has created a rich mosaic of programs that elevate student aspirations and are responsive to the healthcare needs of society.

As an advocate for an expanded scope of pharmacy practice, the college creates new paradigms for collaborative practice models that will shape the future of the profession of pharmacy. Three newly constructed state-of-the-art research facilities in the Wet Lab building enable meaningful collaboration with industry and further innovation in pharmacy education.

The college has completed more than 125 years of service to the state and the nation in the education of entry-level professional students and graduate students. Many LIU Pharmacy alumni have attained prominence in pharmacy and the other health professions.

Mission, Vision and Values

Mission and Vision

The mission of LIU Pharmacy is to educate, lead, and serve.

Our vision is to achieve preeminence in pharmacy education, research, and service through our commitments to:

- Embracing, educating, and empowering

individuals who seek to become pharmacists and pharmaceutical scientists;

- Leading and advancing the profession of pharmacy and the pharmaceutical sciences through innovative practice, research, and education;
- Utilizing our academic disciplines to recognize and satisfy the needs of our community and the world.

Our vision is advanced through our dedication to:

- Creating a supportive and nurturing environment that allows each student to succeed and flourish professionally;
- Developing analytically strong and empathetic new pharmacists who practice evidence-based pharmacy and can contribute effectively to an interprofessional team working to treat individual patients and improve public health.
- Preparing graduate students for teaching, research, and other careers in academia, the pharmaceutical industry, and regulatory agencies;
- Providing academic, professional, and co-curricular opportunities to empower students as intellectually vigorous life-long learners;
- Developing professionals and scientists with inquisitive minds who seek to advance the relevant body of knowledge through research and other scholarly pursuits;
- Fostering the service of faculty, staff, and students towards innovation in practice; advancement in basic, clinical, and translational sciences; application of new educational strategies; and engagement of other health care professionals across the disciplines;
- Providing high-quality opportunities for continuing professional development to pharmacists, pharmaceutical scientists, pharmacy technicians as well as our faculty, staff, and preceptors.

As it has been since our founding in 1886, the achievement of our vision and mission is enhanced and informed by the remarkable diversity of our students, faculty, and other stakeholders and the rich mosaic of communities we serve.

Professional, Undergraduate and Graduate Degrees

LIU Pharmacy (The Arnold & Marie Schwartz College of Pharmacy and Health Sciences) offers the Bachelor of Professional Studies (BPS) in Pharmaceutical Studies as well as an entry-level, Doctor of Pharmacy (Pharm.D.) degree. Master of Science degrees are awarded in Pharmaceutics: Industrial Pharmacy, Pharmaceutics: Cosmetic Science, Drug Regulatory Affairs, and Pharmacology/Toxicology. For the Doctor of Philosophy in Pharmaceutical Sciences (Ph.D.) degree, there are two tracks to choose from Pharmaceutics, and Pharmacology/Toxicology.

Membership

LIU Pharmacy is an institutional member of the American Association of Colleges of Pharmacy (www.aacp.org), the national organization representing pharmacy education in the United States. The mission of the association is to both represent and be an advocate for all segments of the academic community in the profession of pharmacy.

Accreditation

LIU's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60603-4810, 312/664-3575; FAX 312/664-4652; Website: www.acpe-accredit.org.

LIU Pharmacy Publications

In addition to LIU Brooklyn's and LIU's diversified publications, LIU Pharmacy offers:

The Senior Yearbook, a graduation memento published by the Senior Class;

The Bulletin, for Professional and Graduate Pharmacy Programs, listing admission requirements, curricula, course descriptions and other information;

LIU Pharmacy also publishes a series of brochures on such matters as continuing education programs and lectures by visiting scientists.

Pharmacy Student Organizations

Pharmacy Student Leadership Council (PSLC)

The PSLC is the student governing body of the College of Pharmacy that oversees the day-to-day activities of pharmacy students, professional organizations, and clubs. PSLC is recognized by the administration as the official representation of its pharmacy students. The PSLC is governed by a constitution and is led by the PSLC President and Vice President. Other positions that report to the President include the Executive and Corresponding Secretaries, Director of Communications, Treasurer, and the President and Vice President of each class. Other positions include Sponsorship Coordinator, Faculty Liaison and Events Secretary. In addition to organizing and promoting professional and social activities, the PSLC serves as an important link between students and faculty. The PSLC encourages and models professionalism in our pharmacy students on and off-campus. Students are expected to turn to the PSLC when there are questions of fair treatment with faculty and administration. Email PSLC at: liupslc@gmail.com

NATIONAL PROFESSIONAL PHARMACY ORGANIZATIONS WITH LOCAL CHAPTERS:
The American College of Clinical Pharmacy

(ACCP) is a professional and scientific society that provides leadership, education, advocacy, and resources enabling clinical pharmacists to achieve excellence in practice and research. ACCP's membership is composed of practitioners, scientists, educators, administrators, students, residents, fellows, and others committed to excellence in clinical pharmacy and patient pharmacotherapy. ACCP StuNet is a network that provides student members access to leaders in clinical pharmacy, as well as a chance to explore leadership roles within ACCP. StuNet helps you build a professional network that will last long after you complete your degree.

(www.accp.com/stunet)

The Academy of Managed Care Pharmacy

(AMCP) is a professional association of individual pharmacists who use the tools and techniques of managed care in the practice of pharmacy. At the heart of every member is a commitment to a simple goal: Provision of the best available pharmaceutical care for patients. As an organization, its AMCP's mission is to empower its members to serve society by using sound medication management principles and strategies to improve health care for all. The LIU student chapter of AMCP was started this year and plans to implement programs to provide pharmaceutical care to patients and to help reduce health care costs. Additionally, the chapter plans to show students a variety of different opportunities in the managed care setting for pharmacists to use their clinical and other educational skills.

(www.amcp.org)

American Pharmacists Association-Academy of Student Pharmacists (APhA-ASP)

– The Academy of Student Pharmacists is the national professional society of pharmacy students in the United States and an official subdivision of the American Pharmacists Association (APhA). ASP membership is open to any student regularly enrolled in a pre-pharmacy or pharmacy program in an accredited school. At present, ASP has over 12,000 members distributed in 144 colleges of pharmacy in the United States and Puerto Rico. ASP chapters provide many professional, educational, and social activities for members.

(www.aphanet.org)

American Society of Consultant Pharmacists

(ASCP) - ASCP is the national professional association representing pharmacists who provide medication distribution and consultant services to patients in long-term care facilities.

(www.ascp.com)

The American Society of Health-System

Pharmacists- Student Society of Health-System Pharmacists (ASHP- SSHP) – SSHP offers a broad array of services and products to health-system pharmacists and services as a national accrediting organization for pharmacy residency and technician training programs. Any student interested in institutional pharmacy practice should join; benefits include Studentline, a student newsletter, and special programs at ASHP national

meetings. (www.ashp.org)

The Drug Information Association (DIA) has served for more than 50 years DIA as a global forum for all involved in health care product development and life cycle management to exchange knowledge and collaborate in a neutral setting. Our goal is to help students find the information they need to help build and sustain their careers while expanding their network with key professionals from industry, government, academic, and patient organizations.

(www.diaglobal.org)

The Industry Pharmacist Organization (IPhO)

was founded by industry pharmacists for industry pharmacists. Its mission is to give pharmacy students more information to better understand the career opportunities open to them in the pharmaceutical industry. The chapter invites industry professionals, many of whom are alumni, to talk about their career paths and how to be successful in their areas of practice. IPhO members collect information on related internships as well as the skills, education and experience that will be helpful in starting a career in the pharmaceutical industry. In addition, the members work together to explore the different areas of pharmacy within an industry where pharmacy students and pharmacists have opportunities for work. (www.industrypharmacist.org)

The National Community Pharmacists

Association (NCPA) was founded in 1898 as the National Association of Retail Druggists (NARD). It represents pharmacist owners, managers and employees of nearly 22,000 independent community pharmacies across the United States. Independent pharmacists- more than 60,000 Nationwide –dispense the majority of the nation's retail prescription drugs. The student chapter offers students a wide array of opportunities to broaden and enrich their educational experience and gain valuable, real-world skills.

(www.ncpanet.org)

New Jersey Pharmacy Student Association

(NJPhA) was founded in 1870 to represent pharmacists in the State of New Jersey who practice in all areas of pharmacy. The student chapter was formed to promote networking opportunities for students who plan to practice in New Jersey. (www.njpharmacist.org)

The New York State Council of Health-System

Pharmacists (NYSCHP) is the state's premier provider of information, training, and legislative representation for health-system professionals. The organization's approximately 2,000 members include pharmacists, pharmacy technicians, and pharmacy students. (www.nyschp.org)

Student National Pharmaceutical Association

(SNPhA) is the student arm of the National Pharmaceutical Association which was established in 1947 to represent the views and ideas of minority pharmacists on critical issues affecting healthcare and pharmacy, promoting racial and health equity. SNPhA's mission is to plan, organize, coordinate, and execute programs geared

toward the improvement of the health, educational, and social environment of minority communities and to offer student members the opportunity to develop leadership and professional skills (www.npha.net/snpha)

The Student Pharmacists Society of the State of

New York (SPSSNY) is a student chapter of the state pharmacists' organization whose focus is to promote the profession through legislative initiatives, networking opportunities and continuing education programs. The focus of this chapter is to keep students informed and mobilized regarding pending legislation that will affect the practice of their profession in New York. All students in the professional program receive membership in SPSSNY (www.pssny.org).

ETHNIC AND RELIGIONS

ORGANIZATIONS:

African Pharmacy Student Association

(APhSA) was created to foster the unity and progress of African and other students with varied continental backgrounds in the College of Pharmacy. Its main goal is to connect student pharmacists with the community and to enhance their outreach by creating more networking opportunities with alumni practicing in a variety of career paths. (LIU APhSA liuaphsa@gmail.com)

Bangladeshi American Pharmacists Association

(BAPA) is the student chapter of the parent BAPA organization and an ethnic affiliate of PSSNY. The purpose of the organization is to foster cooperation and collaboration among Bangladeshi pharmacy students; to network with the Bangladeshi pharmacy community and to support the profession of pharmacy in Bangladesh and in North America. (www.facebook.com/bapainfo)

Indo-American Pharmacists Society (IAPS)

was formed by pharmacy students of Indian origin to promote social and professional networking opportunities and is open to all pharmacy students. IAPS is an ethnic affiliate of PSSNY.

(www.iapsrx.org)

Jewish Pharmaceutical Society (JPS)

was originally formed in the 1950s at the Brooklyn College of Pharmacy and has been revived by students interested in promoting the profession among Jewish pharmacy students. Their events and guest speakers focus their attention on the intersection of their faith and their profession. (jewishpharmaceuticalsociety@gmail.com)

Middle Eastern Pharmacy Association (MePA)

is affiliated with the American Pharmacist Association (APhA). MePA's mission is to have student pharmacists communicate and collaborate with Middle Eastern communities in order to raise health awareness and improve patient care.

National Hispanic Pharmacy Association

(NHPA) was formed to increase access to care for Hispanic communities. NHPA's goal is to empower Hispanic pharmacists and other members of the health care community. The organization plans to lead efforts that will improve the health of Hispanic populations, which are currently underrepresented among health professionals.

Pakistani-American Pharmacists Association (PAPA) is a student professional organization involved in promoting the practice of pharmacy, education, and research for pharmacists of Pakistani origin and is open to all pharmacy students. It is an ethnic affiliate of PSSNY. (papausa.com)

OTHER PROFESSIONAL HEALTH-RELATED ORGANIZATIONS:

ACE - The Health Practitioner's Society, is a social and professional society for members from all health professions, where creating a close-knit network for health professionals is the main focus. ACE collaborates with other health professional students on organizing health fairs and interprofessional experiences.

(<https://www.facebook.com/acehps>)

The Initiation of Giving Internationally through Volunteer Experiences, (iGIVE) was formed by pharmacy students but is open to all students of Long Island University. Our goal is to provide opportunities for students interested in service abroad, particularly in underdeveloped countries, such as Haiti, Honduras, and Costa Rica, Bangladesh, Guyana among others. Students may use the service experience abroad to fulfill requirements toward their Doctor of Pharmacy degree. The organization is dedicated to building sustainable projects in the communities they visit. The membership promotes education on the campus of these health initiatives through Professional Development Programs (PDPs), fundraising, and other programs. (bkn-igive@my.liu.edu)

Project Sunshine is a renowned international non-profit organization that operates in 5 countries and impacts over 150,000 patients each year. Over 3 million children are hospitalized each year in the United States. That means the lives – and childhoods – of 3 million kids are disrupted each year, too. Through creative, recreational, and educational activities delivered in medical settings by trained volunteers, Project Sunshine works to ensure that all children have access to their childhoods regardless of their health conditions. (www.facebook.com/ProjectSunshineLIU)

Students for Growing Interest for Transplantation (S4GIFT) is a chapter of a national organization interested in educating and training other health professional students on organ and cell donation and transplantation. (www.s4gift.org)

Mount Sinai East Harlem Health Outreach Program is a new program associated with the Mount Sinai Health System which enables pharmacy students are able to work in an interprofessional setting with Icahn School of Medicine medical students to provide care for uninsured/undocumented New Yorkers. For P4, P5, and P6 students.

Weil Cornell Community Clinic (WCCC) Program. This is a student-initiated program that collaborates with medical students from Weill

Cornell Medicine to counsel clinic patients in an underserved Manhattan community under the supervision of a physician and clinical pharmacist. For P4, P5, and P6 students.

PROFESSIONAL FRATERNAL SOCIETIES:

Kappa Psi Pharmaceutical Fraternity (KY) - Zeta Nu Chapter is the oldest national co-ed pharmaceutical fraternity. Through the objectives of developing industry and fostering fellowship, sobriety, and high ideals, KY strives to advance the profession of pharmacy and service the community. (www.kappapsi.org)

Lambda Kappa Sigma (LKS) – Alpha Eta Chapter is the only international, professional fraternity for women enrolled in pharmacy. It seeks motivated female students to join its ranks and encourages the development of its members both culturally and intellectually. LKS provides both professional and social functions throughout the academic year. (www.lks.org)

Phi Delta Chi Pharmacy Fraternity (PDC) develops leaders to advance the profession of pharmacy. Phi Delta Chi, a lifelong experience, promotes scholastic, professional, and social growth in its Brothers. As a co-ed fraternity, we strive to provide quality services to our patients, thereby advancing public health and strengthening ourselves as health professionals. (www.phideltachi.org)

PHARMACY HONOR SOCIETIES:

Phi Lambda Sigma—Beta Kappa Chapter—is the national pharmacy leadership society that promotes the development of leadership qualities among pharmacy students. To be eligible for membership, the student must be of high moral and ethical character, must have completed 96 credits of scholastic work applicable for the pharmacy degree, and have a grade point average of at least 2.50. Prospective members are nominated on the basis of their demonstration of dedication, service, and leadership in the advancement of pharmacy. Members are selected by peer recognition. (www.philambdasigma.org)

The Rho Chi Society –Beta Theta Chapter— is the national pharmacy honor society, which stimulates and recognizes superior scholarly achievement in pharmacy. Entry-level students in the upper 20% of their class who have a cumulative index of 3.5 or better are eligible for membership during their fourth year. Graduate students are eligible for membership if they have completed at least 24 credits with a B+ average in addition to other requirements. Eligible students will be automatically nominated for Society membership. Members are available to tutor pharmacy students during posted hours at a designated location throughout the academic year. (www.rhochi.org)

PUBLICATIONS & SOCIAL MEDIA

The Pharmacy Newsletter (TPN) is a print and online publication by students in the PharmD

program that aspires to promote communication among students, faculty, administrators, and the wider campus of LIU Brooklyn. In addition to covering events, activities, and interviews for and about the College of Pharmacy, each semester's issue has a particular focus within the profession and may include original research as well as articles on scientific subjects.

(<https://www.facebook.com/groups/ThePharmacyNewsletterLIU>)

Doses & Notices is a reboot of an earlier College of Pharmacy publication that is a bi-weekly online newsletter featuring current issues relevant to pharmacy students and faculty.

Pharmakon is the yearbook of the Arnold & Marie Schwartz College of Pharmacy and Health Sciences at Long Island University. It is developed annually by graduating students. Since the earliest years after it was founded in 1886, the Brooklyn College of Pharmacy's graduating class published an annual yearbook called The Crimson and Gold. In 1924, it was renamed Pharmakon, an ambiguously interesting Greek word meaning that "which acts as both remedy and poison;" it also refers to the gift of writing. The editors of Pharmakon accept the ambiguity of our publication's title seriously since it accurately reflects our experience at this institution: that which hasn't killed us has made us stronger. The title's secondary meaning, the gift of writing, we take as a challenge, to improve upon that which has been passed down to us.

LIU PHARMACY FACILITIES

Computer Laboratory

Computers on the third floor of the library are available for student use. Computer labs for courses and testing are in the Metcalfe building and the Pratt building.

LIU Pharmacy (Main Building)

The three-story main building of LIU Pharmacy houses the offices of the deans and administrative staff. Adjacent to these offices is the dean's conference room. In addition, the first floor of the building houses the Office of Student and Professional Affairs and the Office of Student and Professional Activities. Faculty office suites for the Divisions of Pharmaceutical Sciences and Pharmacy Practice are located in the basement of this building. The suites consist of offices for divisional faculty members and support staff. The second floor of the building contains a student lounge, a faculty lounge, an office for student professional organizations, a lecture room, and the Offices of Continuing Professional Education and Interprofessional Education. The third floor of the main building houses the Office of Assessment, additional faculty office suites for the Division of Pharmacy Practice, and a quiet study room for pharmacy students.

Pharmacy Wet Lab Building

The three-story Wet Lab Building contains a mix of faculty offices, research facilities, and teaching laboratories. The first floor of the building houses a Physical Assessment Laboratory that utilizes computer technology and other equipment to provide students with "hands-on" training and practice in physical assessment as well as a student study space that facilitates group work. The second floor houses research laboratories for the Division of Pharmaceutical Sciences, the Pharmacy Dispensing Laboratory, and the Pharmacy Practice Laboratory. The third floor of the building houses three newly constructed state-of-the-art research facilities: the Natoli Institute for Industrial Pharmacy Research and Development; Joan and Samuel J. Williamson Institute for Pharmacometrics; and the Leon Lachman Institute for Pharmaceutical Analysis. The third floor also houses the college's Animal Care Facility and the Arthur G. Zupko Systems Pharmacology and Pharmacogenomics Laboratory.

William Zeckendorf Health Sciences Center

This six-story facility houses offices, classrooms, laboratories, and student study spaces for LIU Pharmacy as well as the Harriet Rothkopf

Heilbrunn School of Nursing and School of Health Professions. The Division of Pharmaceutical Sciences occupies the sixth floor of the building. In addition to division and faculty offices, the sixth floor contains numerous research laboratories, a seminar room, a conference room, and a study room for students.

LIU PHARMACY OFFICES AND SERVICES

Office of the Dean

Dr. Arash Dabestani, Dean
Ms. Gloria Khan; Secretary
718-488-1004

Office of the Assistant Dean for Academic and Student Affairs

Dr. Jaclyn Novatt, Assistant Dean for Academic and Student Affairs
718-488-1234

Office of the Assistant Dean for Admissions and Professional Affairs

Office of Experiential Education

Dr. Brian Yeung, Assistant Dean for Admissions and Professional Affairs, Director of Experiential Education
718-488-1234

Office of the Associate Dean for Research and Graduate Programs

Dr. Christopher Surratt, Associate Dean for Research and Graduate Programs
718-780-6123

Office of Assessment

Dr. Tina Zerilli, Director of Assessment, Associate Professor of Pharmacy Practice
718-780-4004
Ms. Vanessa Vacchiano
Assistant Director of Assessment
718-780-4048

Office of Interprofessional Education

Dr. Janna Roitman, Director of Interprofessional Education, Associate Professor of Pharmacy Practice
718-780-6121
Ms. Milena Ioselevich, Coordinator
718-488-1065

Student and Professional Affairs

718-488-1234

The Office of Student and Professional Affairs serves as an advisement and resource center for students enrolled in the professional programs of LIU Pharmacy. The office provides students with academic and personal advisement, registration materials, information on scholastic standing, scholarship applications, applications for intern permits and board examinations, listings of intern positions and other employment opportunities, information on student activities and professional organizations, and other services and information of interest to professional pharmacy students.

Academic and personal advisement is provided by a professional staff knowledgeable of the pharmacy curricula and empathetic to the needs and concerns of professional students. Additionally, the staff assists students with course selection and registration, coordinates open houses for prospective students, facilitates student success workshops, prepares scholarship letters, assists in

the review of applicants and coordinates the interview schedule of applicants, and assists in matters of progression and scholastic review of students.

Student and Professional Activities

718-488-1241

The Office of Student and Professional Activities is responsible for coordinating the activities of pharmacy student organizations in association with the Office of the Assistant Dean of Admissions and Professional Affairs. The office arranges and coordinates informational activities for pharmacy students including Professional Development Hours, alumni mentor days, pharmacy residency, fellowship and graduate programs showcases, résumé and interview workshops, and career fairs as well as coordinating on-campus recruitment of pharmacy students with LIU Brooklyn's Office of Career Services. In addition, the office oversees the LIU Pharmacy Student Leadership Council and yearbook staff.

Division of Pharmaceutical Sciences

718-780-4560

The Division of Pharmaceutical Sciences provides students with requisite instruction and skill development in biological, chemical, physical, mathematical, administrative, social, and behavioral sciences, as well as selected areas from the humanities such as law, ethics, and communications, and the application of these areas to both the pharmaceutical sciences and the practice of pharmacy. The knowledge imparted to the professional program student covers a broad range of topics such as biochemistry, physiology, pathophysiology, microbiology, immunology, pharmacology, toxicology, medicinal chemistry, pharmaceuticals, pharmacokinetics, health delivery and finance, practice management, pharmacoeconomics, pharmacy law, patient behavior, and professional communications. Additionally, the division is responsible for the delivery of the college's graduate programs.

Division of Pharmacy Practice

718-488-1270

The Division of Pharmacy Practice provides students with the requisite instruction and skill development for engaging in the profession of pharmacy in ways that optimize health outcomes from pharmaceutical and other related treatments and interventions, ensure the effective and safe use of pharmaceuticals and maximize the benefits to both patients and society at large from the use of medications. This is accomplished through both didactic course offerings in areas such as

pharmacotherapeutics, physical assessment, drug information and literature evaluation, clinical pharmacokinetics, as well as introductory and advanced pharmacy practice experiences (with the Office of Experiential Education) offered throughout the professional phase of the Doctor of Pharmacy program.

Office of Experiential Education

LIU Pharmacy's Office of Experiential Education is responsible for the overall programmatic planning, management, and oversight of the experiential education programs. The Office ensures that experiential programming meets ACPE Standards and Guidelines as well as the goals and objectives noted in the College's Mission and Vision. Accounting for approximately 30% of the professional pharmacy curriculum, the goal of the experiential education program at LIU Pharmacy is to augment students' classroom learning experience with direct interaction with health care providers and patients. Experiential education provides an opportunity for students to participate in a variety of patient-centered activities with other members of the healthcare team in various patient care settings and to take responsibility for providing direct patient care. Emphasis is placed on developing each student's ability to identify and resolve medication-related problems while displaying professionalism, confidence, and decisiveness. Additionally, through the various required and elective opportunities, students can participate in non-patient care activities related to pharmacy and apply skills necessary for successful practice in the diverse field of pharmacy.

Office of Assessment

The Office of Assessment supports the College's assessment program as it relates to its academic, programmatic, and accreditation goals. Specific functions include:

- Implementing and updating the programmatic evaluation plan for the College
- Supporting faculty in the development, implementation, and analysis of curricular and student learning outcome assessment plans
- Supporting faculty and administrators in identifying, designing, and refining measurement tools
- Managing and disseminating to key stakeholders data related to student achievement of core competencies and learning outcomes, national surveys, and standardized examinations
- Administering student evaluations of course and instructor effectiveness
- Managing the College's computer-based testing system, ExamSoft
- Administering various assessment activities including objective structured clinical examinations and focus groups

- Ensuring that monitoring and self-study reports are prepared and submitted to the Accreditation Council for Pharmacy Education

Office of Interprofessional Education

The World Health Organization (WHO) defines interprofessional education as an education that “occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.” In 2009, the Interprofessional Education Collaborative (IPEC) established common core competencies for interprofessional collaborative practice which can help guide curricula development across the health professions.

The Four Core Competency Domains include:

- Values/Ethics for Interprofessional Practice.
- Roles/Responsibilities.
- Interprofessional Communication.
- Teams and Teamwork.

The LIU College of Pharmacy has instituted several initiatives to ensure that all pharmacy students engage in interprofessional education (IPE) experiences and are equipped with the knowledge and skills necessary to effectively collaborate with multiple healthcare professionals to provide excellent patient-centered care.

The LIU College of Pharmacy has collaborated with neighboring and affiliated healthcare facilities and programs along with the many healthcare programs on campus including LIU School of Health Professions and LIU Heilbrunn School of Nursing to provide our students with exceptional campus-wide IPE experiences. The College also successfully established strong working relationships with NYU Medical School, NYU Dental Schools, and NYU Nursing School to provide cooperative IPE activities for our students. The LIU College of Pharmacy has a very long decorated history (over 125 years) of serving as a leading healthcare champion in New York City. It is one of the oldest and most prestigious colleges of Pharmacy on the east coast.

The IPE program is an integral component of the curriculum for the college's entry-level Pharm.D. students. Entering pharmacy students are instructed that is imperative that all students in each professional year of study must actively participate in IPE activities as a graduation requirement. Some of the IPE programs that our students have recently participated in include teaching oral-systemic health (TOSH) with our affiliate at NYU, and identifying and managing opioid addiction and substance abuse with nursing students at NYU.

The goals of the IPE office are to

- (1) continue to working closely with our present partners while seeking new affiliates to expand the college's number and scope of IPE activities
- (2) to incorporate on daily basis the merits IPE activities into the college's experiential curriculum (IPPEs and APPEs).

The latter will not only expand both the number of and breadth of IPE opportunities available for our students but will also lay the proper foundation for our students to confidently take the lead role on medication-related issues when working with other health professionals.

Continuing Professional Education

718-488-1065

LIU Pharmacy's Department of Continuing Professional Education serves pharmacists in advancing their continuing professional development (CPD) by providing live and web-based continuing professional education (CPE) activities.

The department affirms the mission of LIU Pharmacy and articulates its own primary mission of providing sufficient, affordable, convenient, and high-quality knowledge-based CPE activities to maintain, advance, and enhance the competencies and ongoing professional development of pharmacists.

An average of 20 continuing professional education activities is provided each year. Target audiences vary by activity but in most cases, activities are structured for pharmacists practicing in community-, ambulatory- and/or institutional-based settings that deliver patient-centered care. Many of the activities focus on pharmacotherapy for various disease states and/or special populations such as geriatric or pediatric patients. These activities are designed to advance and enhance the evidence-based practice of participants. Also regularly offered are activities that focus on general practice areas such as pharmacy laws and regulations, patient education and communications, and practice management.

Since 2008, the department has trained over 4000 pharmacists and students to be certified immunizers and has recently added the APhA Medication Therapy Management (MTM) certificate program to its offerings as well as Cardio Pulmonary Resuscitation (CPR) and Basic Life Support.

The department strives to provide a minimum of 3 contact hours of activities on medication errors and patient safety each year for those pharmacists needing to satisfy New York State requirements for continuing professional education.

In-person live CPE activities are available at convenient locations in the New York City metropolitan area including our LIU Brooklyn Campus. Participation in these live offerings affords valuable networking occasions in addition

to advancing CPD. On-demand web-based CPE activities are also available. Featuring a wide range of topics these activities are designed for completion at the learner's own convenience and pacing. Visit the Continuing Professional Education website

at <https://pharmce.liu.edu/> or call 718-488-1065 for the latest information.

The Leonardi Institute for Health Analytics and AI (formerly the International Drug Information Center)

718-488-1064

The Leonardi Institute for Health Analytics and AI at LIU Pharmacy represents the College's entry into the sector of the healthcare industry that utilizes the latest technologies and artificial intelligence (AI) for the delivery of evidence-based healthcare. The Institute also signifies the evolution of the College's drug information center such that it is well-positioned to address the contemporary and future healthcare needs of a variety of stakeholders. Since its inception in 1973 as the College's International Drug Information Center (IDIC), the Center (currently the Institute) has been providing information about pharmaceuticals and dietary supplements to a varied client base including pharmacists, physicians, nurses, other healthcare professionals, pharmaceutical companies, attorneys, law enforcement agencies, pharmacy benefit managers, poison control centers, and other institutional and organizational clientele. In addition, the Institute supports the information needs of its affiliated practice sites. The Institute has also been addressing the drug information needs of select consumer groups. In its new venture, the Institute utilizes a proprietary platform that relies on large real-world data sets to generate real-world evidence to optimize patients' plans of care. The platform enables the Institute's staff to compare treatments, drugs, processes, and costs in order to achieve the best outcomes and reduce the total cost of care.

The Institute is staffed by drug information specialists holding faculty appointments at LIU Pharmacy who are experienced in retrieving, analyzing, and applying data generated by the medical and pharmaceutical literature and other sources. The expertise and experience of the specialists, coupled with the Institute's resources, allow the specialists to provide a variety of services including responses to drug information queries, drug therapy reviews, comparative drug evaluations, and other related projects. The Institute serves as a training site for senior pharmacy students enrolled in advanced pharmacy practice experiences as part of LIU's Doctor of Pharmacy program. Under the supervision and guidance of the Institute's faculty, students engage

in all activities performed at the Institute.

The Institute also serves as a training site for post-Pharm.D. fellowship programs in drug information & medical communications and in health analytics & AI.

Alumni Association

The Alumni Association of LIU Pharmacy is comprised of individuals who have been granted entry-level and/or graduate degrees from LIU Pharmacy or the former Brooklyn College of Pharmacy. The purpose of the Alumni Association is to foster meaningful social and professional relationships among all members of the college family, to further the profession of pharmacy, and to develop and advance the interests of LIU Pharmacy.

Alumni Association benefits include the following:

- Membership at the Steinberg Wellness Center for a nominal fee
- Access to campus facilities, including the library and computer labs with alumni ID card
- Invitations to LIU Pharmacy special events
- Local and online discounts

The Alumni Association encourages all alumni of LIU Pharmacy to support the Annual Fund, which provides assistance to LIU students in need through vital financial aid programs.

ABOUT LONG ISLAND UNIVERSITY

Mission Statement

Long Island University's mission is to provide excellence and access in private higher education to those who seek to expand their knowledge and prepare themselves for meaningful, educated lives and for service to their communities and the world.

Vision

To become a nationally recognized, globally engaged, teaching and research university.

Motto

Long Island University's motto is *Urbi et Orbi* – "To the City and to the World."

Founding Date

Long Island University was founded in 1926.

Alumni

LIU has an active network of more than 275,000 alumni, including leaders and innovators in industries across the globe.

Athletics

Colors: Blue and Gold
Nickname: Sharks Mascot: Shark
Teams: 35
National Affiliation: NCAA Division I
Conference: Northeast Conference (NEC)

Campuses

LIU Brooklyn

1 University Plaza
Brooklyn, NY 11201
718-488-1000
www.liu.edu/brooklyn

LIU Post

720 Northern Boulevard
Brookville, NY 11548
516-299-2000
www.liu.edu/post

LIU Global

1 University Plaza
Brooklyn, NY 11201
718-488-1000
www.liu.edu/global

LIU College of Pharmacy

75 DeKalb Avenue
Brooklyn, NY 11201
718-488-1234
www.liu.edu/pharmacy

LIU College of Veterinary Medicine

720 Northern Boulevard
Brookville, NY 11548
516-299-2000
www.liu.edu/vetmed

LIU Hudson

735 Anderson Hill Road
Purchase, NY 10577
1800-GRAD-LIU
www.liu.edu/hudson

LIU Riverhead

121 Speonk-Riverhead Road
Riverhead, NY 11901
631-287-8010
www.liu.edu/riverhead

University Policies

Long Island University does not discriminate on the basis of race, color, national origin, sex, disability, or age in its programs. The following person has been designated to handle inquiries regarding the non-discrimination policies:

Title IX Coordinator
Long Island University
700 Northern Boulevard
Brookville, New York 11548
Phone: (516) 299-4236

For assistance related to Title IX or other civil rights laws, please contact OCR at OCR@ed.gov or 800-421-3481, TDD 800-877-8339.

DIRECTORY**LIU PHARMACY GENERAL INFORMATION:**

718-488-1234

LIU PHARMACY ADMINISTRATION:**DEAN—**

Arash Dabestani, Pharm.D., MHA, FASHP, FABC

Rm. L108; 718-488-1004

VICE/ASSOCIATE DEAN FOR ACADEMIC AFFAIRS—

Vacant

ASSISTANT DEAN FOR ACADEMIC AND STUDENT AFFAIRS—

Jaclyn E. Novatt, B.A., M.S., Ph.D.

Rm. L130E; 718-488-1234

ASSISTANT DEAN FOR ADMISSIONS AND PROFESSIONAL AFFAIRS and DIRECTOR OF EXPERIENTIAL EDUCATION —

Brian Yeung, Pharm.D.

Rm. L124; 718-488-1234

ASSOCIATE DEAN FOR RESEARCH AND GRADUATE PROGRAMS—

Christopher Surratt, B.A., Ph.D.

Rm. LB20; 718-780-6123

INTERIM CHAIR, DIVISION OF PHARMACY PRACTICE—

Elaine Wong, PharmD, BCPS, BC-ADM

Rm. L35; 718-780-6052

INTERIM CHAIR, DIVISION OF PHARMACEUTICAL SCIENCES—

Anthony J. Cutie, R.Ph., Ph.D.

Rm. WL111; 718-488-1626

DIRECTOR OF ASSESSMENT—

Tina Zerilli, Pharm.D.

Rm. L306B; 718-780-4004

ASSISTANT DIRECTOR OF ASSESSMENT—

Vanessa Vacchiano

Rm. L306A; 718-780-4048

DIRECTOR, CONTINUING PROFESSIONAL EDUCATION—

Joseph J. Bova, B.S., M.S.

Rm. L207; 718-488-1065

PHARMACY PROJECT COORDINATOR—

Akanksha Kashyap, B.A., M.A.

Rm. L108; 718-488-1228

DIRECTOR, PHARMACY DEVELOPMENT—

Mala Sukhman, B.A.

Rm L136; 718-488-3368

DIRECTOR, STUDENT AND PROFESSIONAL ACTIVITIES—

Patrick J. Campbell, B.A., M.A.

Rm. L123; 718-488-1241

DIRECTOR, PROGRAM SUPPORT SERVICES—

Aruna Kissoon, B.A., M.S.

Rm. HS614A; 718-780-4560

COORDINATOR, PHARMACY ACADEMIC ADVISING—

Jacqueline McEwan, B.A., M.S.

Rm. L130B; 718-488-1235

DIRECTOR, PHARMACY ACADEMIC SERVICES—

Phyllis Stone, Ed.D.

Rm. L130D; 718-488-1235

PHARMACY ACADEMIC ADVISOR—

Vacant

Rm. L130C; 718-488-1693

PRE-PHARMACY ACADEMIC ADVISOR

Joyce Lau, M.S.Ed.

Rm. L130A; 718-488-1238

FIELD COORDINATORS, EXPERIENTIAL EDUCATION—

Fernando Gonzalez, B.S., M.S.

Rm. L207; 718-488-1636

Tracey Hodurski, B.S.

Rm LB12; 718-780-4593

Edgar Schwartz, R.Ph.

Rm. HS 114B, 718-488-1244

Gale Glazer, Pharm.D.

Rm. HS114B; 718-780-6037

COORDINATORS OF EXPERIENTIAL EDUCATION—

Shana Young, CPhT

Rm. HS114C; 718-488-1232

Howard Mandelbaum

Rm HS114A; 718-488-3455

LIU BROOKLYN GENERAL INFORMATION:

718-488-1000

ADMISSIONS

Sloan 101; 718-488-1011

LIBRARY

718-488-1680

PUBLIC SAFETY

Rear, Metcalfe Building; 718-488-1078

DEVELOPMENT AND ALUMNI RELATIONS

Rm. M101; 718-780-6562

ENROLLMENT SERVICES (Bursar, Financial Aid, Registrar)

Sloan 310; 718-488-1037

LIU PROMISE

Pratt 321; 718-488-1042

INFORMATION TECHNOLOGY

Rm. LLC227; 718-488-3300

INTERNATIONAL STUDENT SERVICES

Rm. M311; 718-488-1389

STUDENT SUPPORT SERVICES

Rm. P410; 718-488-1044

ACADEMIC CALENDAR 2021-2022

Fall 2021

September 6	Labor Day-holiday
September 8	Weekday classes begin
September 8-21	Registration and program changes
September 11-12	First weekend session classes begin
September 21	Registration and program changes end
October 8	Last day to apply for a comprehensive examination
October 12	Spring 2022 Registration Begins for Continuing Students (tentative)
October 23-24	First weekend session final examinations
October 29	Last day to apply for January degree
October 30-31	Second weekend session classes begin
November 2	Election Day-classes in session
November 12	Last day for full or partial withdrawal for full-term Spring courses
November 24	Wednesday classes don't meet/Wednesday follows a Friday schedule
November 28-28	Thanksgiving holiday
November 29	Classes resume
December 18-19	Second weekend session final examinations/last class meeting
December 16	Semester classes meeting Monday through Friday end
December 17	Last day to submit a thesis
December 17-23	Final examinations-undergraduate and graduate
December 24	Winter recess begins

Winter 2022

January 3	Interession Classes Begin
January 14	Final Class Meeting/Final Exam

Spring 2022

January 14	Awarding of January degrees
January 17	Martin Luther King Day - no classes
January 18	Weekday classes begin
January 18 - 31	Registration and program changes
January 22-23	First weekend session classes begin
January 31	Registration and program changes end
February 14	Summer/Fall 22 Registration begins (tentative)
February 21	President's Day-no classes
February 22	Tuesday follows a Monday schedule
February 25	Last day to apply for May degree
March 5-6	First weekend session final examinations

March 7	Spring recess begins
March 14	Classes resume
March 19-20	Second weekend session classes begin
April 1	Last day for withdrawal from full-semester classes
April 30 - May 1	Second weekend session final examinations/Last Class Meeting
May 3	Semester classes meeting Monday through Friday end
May 4-10	Final examinations-undergraduate and graduate
May 13	Last day to submit a thesis
May 13	Commencement Ceremony (tentative)
May 14	Conferral of May degrees

Summer I 2022

May 14-15	Weekend session classes begin
May 16	Weekday classes begin
May 17	Registration and program changes end for weekday classes
May 20	Last day to add Weekend Session Class
May 28-30	Memorial Day-holiday
June 14	Last day for withdrawal from Summer I classes
June 227	Last day of weekday classes
During Last Class Meeting	Final Exams Summer 1
July 2-3	Independence Day holiday - no weekend classes
July 9-10	Weekend session final examinations/Last Class Meetings

Summer II 2022

July 11	Weekday classes begin
July 12	Registration and program changes end for weekday classes
July 15	Last day to apply for September degree
July 15	Last day to apply for a comprehensive examination
July 16-17	Weekend session classes begin
July 22	Last day to add Weekend Session Class
August 5	Last day for withdrawal from Summer II classes
August 19	Last weekday class
During Last Class Meeting	Final Exams Summer 2
August 26	Last day to submit thesis and complete degree requirements
August 27-28	Weekend session final examinations
August 31	Summer degrees conferred

HONORS COLLEGE

The Honors College at LIU was founded in 1965 as one of the nation's first honors programs. It has achieved national recognition and prepares a select group of diverse and highly gifted students from all majors to solve society's greatest challenges. Our mission is to foster tolerance, celebrate diversity, and provide students the flexibility necessary to succeed in the workforce of tomorrow.

Honors students explore world perspectives through our innovative curriculum that provides research opportunities and cutting-edge interdisciplinary education. Through opportunities outside the classroom, including study-abroad programs, students become accomplished global citizens who are prepared to balance creativity and analytic skill and become leaders in their respective fields. Honors students enjoy early registration, small classes, interdisciplinary courses not offered through other departments, and a special honors citation on their diploma at graduation along with honors regalia. Honors students also enjoy a dedicated space in the Honors Lounge, where they can take advantage of state-of-the-art computers, quiet study rooms, and space for extracurricular honors activities. Dedicated faculty and staff mentor Honors students into national fellowship and scholarship competitions, while upperclassmen create a community of learning where new students receive peer support and the option of being inducted into several honors societies offering additional scholarships for undergraduate and graduate careers.

The Honors College also gives students the freedom to design their own interdisciplinary majors. Honors College students are encouraged to shape their own education through curricular and extracurricular activities. They may do so by taking a broad range of courses outside their areas of concentration, joining Honors-only study-abroad programs, and dedicated honors mentoring events.

STUDENT LIFE

Long Island University is an exciting and vibrant community that provides students with opportunities to become engaged on-campus, make life-long friendships, explore professional and career interests, or enhance their leadership skills and complement their in-the-classroom experience.

Through the Division of Student Affairs and LIU Promise, students can participate in over 70 student organizations, join national fraternities and sororities, and attend over 1,000 events held each year. In addition, our robust Division I Athletic program is at the heart of Shark Nation. Residence halls also provide students the opportunity to live on campus while they complete their degree.

Students can be informed on various campus life programs and opportunities through EXPERIENCE | Shark Nation, the University's student engagement platform. To learn more, visit liu-bk.presence.io/events

Division I Athletics

LIU is home to an accomplished and proud Division I athletics program that represents Shark Nation. Fielding 36 athletic teams on two campuses, LIU's NCAA Division I program builds on a foundation of tradition and excellence. In LIU's history, its teams have a combined 24 national championships, 248 conference championships, and 380 All-Americans. For more information on Athletics, visit liuathletics.com.

Student Organizations

LIU Promise is dedicated to providing strong networks of support that will guide student organizations in their implementation of programs and initiatives to accomplish their mission, thus creating a robust student experience. In conjunction with club advisors, Promise Liaisons work directly with student organizations to help realize their organization's potential and developing student leadership. Our student organizations include social, pre-professional, cultural, academic, faith-based groups and honor societies.

Student Government Association

The Student Government Association is the representative body of all students at Long Island University. SGA serves as an outlet for student voices to be heard by working closely with the administration and faculty to enhance the overall campus experience. All members share the common goal of bettering the campus community.

SGA elections take place twice a year and include an executive board, class presidents, commuter senators, resident senators, transfer senators, international senators, and at-large

senators to represent all students.

SGA has weekly general meetings that are open for all students to attend.

LIU Cares

LIU students give back to the local and global communities through service organizations, charity events, and social awareness initiatives throughout the year. The LIU Cares initiative connects our students, faculty and staff, and alumni to the power of service through volunteerism and community engagement. Students can support a cause that is important to them or join one of the many opportunities that already exist. Students typically perform more than 150,000 service hours and fundraise thousands of dollars for various charities each year. For more information on service opportunities, contact liucares.org or visit LIU Promise.

Diversity, Equity and Inclusion

Long Island University is committed to inclusive excellence and a sense of belonging for all members of the University community. Our community is built upon a foundation of diversity, equity, inclusion, access, opportunity, innovation, confidence, trust, respect, caring, and relationship-building. The University's educates the country and the world, drawing students from over 67 countries. The University is recognized as a top 100 national university for social mobility (U.S. News and World Report Best Colleges, 2021).

Diversity, Equity, and Inclusion (DEI) at the University, is facilitated by the Chief Diversity Officer and is supported by a University-wide DEI committee and a student-run council on Diversity. Programs and initiatives are held throughout the year to fulfil the University's mission. Visit the DEI page on the University's website to become engaged.

Residential Life

Resident students are part of an exciting college community that attracts students from all over the world. Residence halls are tailored to individual needs, from honors college housing to semi-private suites. Living on campus allows students to become totally immersed in college life. Students will enjoy the freedom of living on their own while meeting new people and making lasting friendships.

Living at LIU offers:

- Options for singles, doubles, triples, apartments, and suite-style
- All utilities, WiFi, and laundry included
- Convenient online housing and roommate selection process
- Late-night access to Fitness Center, Library, and other facilities
- Affordable housing rates

- Several meal plan options and dining locations
- Lounges in each building with TVs and computers
- Professional and peer staff in each residence hall for 24/7 assistance
- ID access and evening security for all buildings
- Floor and Hall programming

Residence Halls

- Conolly Hall (on-campus)
 - Fulton Hall (off-campus, nearby)
-

Campus Recreation and Intramurals

The Department of Campus Recreation and Intramurals serves as a vital and integral part of campus life at LIU. The department is committed to providing the finest programs, services, facilities, and equipment to enrich the university learning experience and to foster a lifetime appreciation of and involvement in wellness and recreational sports and activities for our students, staff, faculty, and alumni as well as members of the local community.

Campus Recreation offers open gym and pool hours, access to the fitness center, and intramural and recreation programs for students.

Community Standards and Code of Conduct

The mission of the Division of Student Affairs' Community Standards program is to promote students understanding of rights and responsibilities as individuals and as members of the campus community. All students are expected to adhere to principles set forth in the Ethos Statement as well as the provisions set forth in the LIU Code of Conduct.

A student who is allegedly in violation of the Code of Conduct is referred to the Division of Student Affairs to meet with a hearing officer or designee. They provide a fair and educational adjudication process for students. The goal of the process is to promote an understanding of ethical behavior, to encourage personal development, and to develop a sense of importance to becoming a positive contributing member of the community.

Code of Conduct

The Code of Conduct affirms the University's commitment to the values of responsible freedom and interdependence. It expresses our concern for the right to privacy and safety, as well as personal responsibilities, and responsibilities to one another. It is designed to assure respect and equitable treatment of all individuals. It is designed to ensure that student life can develop in an atmosphere conducive to learning and personal growth. The LIU Code of Conduct is founded on the principles of student conduct set forth in the Ethos Statement: respect for oneself, respect for others, respect for property, respect for authority, and honesty.

Until evidence to the contrary is observed, the campus presumes that students are motivated by the desire to improve their capabilities and to help others to do so, that they possess a sense of honor and are trustworthy, and that they are mature individuals, capable of behaving accordingly. Students who violate the rules and regulations must expect that appropriate disciplinary actions will be taken.

The complete version of the Ethos Statement and our Code of Conduct can be found on the University website and in the LIU Student Handbook.

FACILITIES

Career Bar

Located on the third floor of Library Learning Center, the Career Bar offers a central location for students to access computers, print, and study. The Career Bar serves as the host for many Career Success workshops and events throughout the academic year.

Dining and Food Service

Aramark is the official food service and dining provider for Long Island University. Foodservice is provided at several locations throughout the campus. Food may be purchased using meal plans, credit cards, or cash.

To view food options, locations, and hours of operations, students should visit, <https://liu.campusdish.com/>

Downtown Brooklyn Speech-Language Hearing Clinic

The Downtown Brooklyn Speech-Language-Hearing Clinic, located in the Fort Greene/Downtown Brooklyn community, is a vital part LIU-Brooklyn's graduate program in Communication Sciences and Disorders. Our state-of-the-art center employs speech-language pathologists who serve as clinical faculty and supervisors to our graduate interns. The clinical staff is licensed by the NY State Office of the Professions and certified by the American Speech-Language-Hearing Association (ASHA) and the New York State Department of Education. The graduate program is accredited by the Council on Academic Accreditation of ASHA.

If you believe that you, or someone you know, has a speech-language, swallowing, or hearing problem, **call us at 718-488-3480**. Our fees for services are affordable. We also have a reduced fee schedule, if needed, and offer a friend and family rate for LIU Brooklyn students and staff.

Esports Arena

The Esports Arena is a state-of-the-art facility that houses the University's Division I Esports program. The arena, located in Conolly Hall, has been recognized as one of the top facilities in the region. The 5,600 square foot venue is equipped with over 50 computer stations, large-screen viewing televisions, gaming stations, and custom game-day lighting.

Kumble Theater for the Performing Arts

Kumble Theater for the Performing Arts at LIU

Brooklyn is a dynamic, state-of-the-art performance venue serving one of the most diverse campuses and communities in the country. It is designed to nourish artistic exploration and development by students and other emerging artists while providing the entire community greater access to an exciting range of quality classical and cutting-edge professional performances from around the world.

Impeccably crafted for the dramatic and technical demands of dance, music, and theatrical productions, this elegant, 320-seat theater provides finely tuned acoustics and top-tier lighting, projection, and other electronic capabilities. With a stage featuring a "sprung" floor extending to the seating area, the theater fosters intimacy between performers and their audiences.

This extraordinary theater was made possible through the generosity of former LIU Trustee Steven J. Kumble. It is part of an ambitious campus renovation that created an extensive performing arts complex also featuring a black box theater, dance studios, and a glass-enclosed art gallery. Among other major supporters of the performing arts complex is the EAB/Citigroup Foundation, through former LIU Board of Trustees Chair Edward Travaglianti, LIU trustee emeritus Donald H. Elliott, former LIU trustee Bruce C. Ratner, the City of New York, and the Independence Community Foundation.

Multimedia Language Laboratory

Location: LLC-021

Hours: Mon., Tues., Thurs., Fri. 9 a.m. - 5 p.m. Wed., 9 a.m. - 8 p.m.

718-780-4568

The Multimedia Language Laboratory enables all LIU students and staff to improve their language skills at their own pace, either individually or collaboratively, using a full range of interactive language learning software. The Multimedia Language Laboratory provides a learning environment where students can:

- test their comprehension on any items covered in class,
- check their understanding of grammar and spelling,
- read a variety of materials and check their comprehension of vocabulary and content,
- practice pronunciation and listening comprehension through viewing and hearing material in the target language.

The Multimedia Language Laboratory Center is also offering comprehensive four-week computer courses. The courses are complimentary. Students can take classes in:

- Python and Data Science
- SQL and Database Design
- Security+
- CISCO Certified Entry Networking Technician
- Typing
- Advanced Excel

- Excel Power BI
- Microsoft Word
- PowerPoint Beginner to Advanced
- Adobe Photoshop CS6/CC
- WordPress for business

Psychological Services Center

718-488-1266

At our Psychological Services Center, free and confidential personal counseling is offered to students by supervised doctoral candidates in Clinical Psychology. Students experiencing stress in relation to academic, social, or family situations or students who simply feel they are not living up to their full potential for various reasons may benefit from speaking to someone at the center. Whether stress is interfering with a student's ability to do his/her best at school or is affecting the student's family or social life, talking can help. No one in or outside the university knows who comes to the center, except in the rare case of danger to self or others.

The Psychological Services Center is located on the fifth floor of the Pratt Building, room 510. Please call 718-488-1266 to make an appointment.

Steinberg Wellness Center / Wellness, Recreational & Athletic Center (WRAC)

This 112,000 square foot facility supports the campus' Division I athletic teams, provides a state-of-the-art workout facility and swimming pool for the campus community, and offers a broad array of health and wellness services to our students, faculty, and administrators, as well as the members of the LIU Brooklyn community at large.

Steinberg Wellness Center (previously called Wellness, Recreational & Athletic Center {WRAC}) features a 2,500 seat arena, which hosts the campus' Division I basketball and volleyball games, high school athletic events, and a variety of other special events. The fitness center includes state-of-the-art cardio and strength equipment, and a group exercise studio that includes free classes such as Pilates, yoga, hip hop dance, total body conditioning, salsa, Zumba, and abs-workout classes. The facility also includes a 25-yard, eight-lane swimming pool, and a rooftop track and tennis courts.

Steinberg Wellness Center encompasses the Health and Wellness Institute which provides activities and programs that promote good health and wellness behaviors that reduce health disparities and improve the quality of life for members of the campus community and the community at large. The Health and Wellness Institute houses one of New York City's only state-of-the-art HydroWorx 2000 therapeutic pool, which includes an elevating floor to allow for easy access and varying water levels, an underwater treadmill with speeds up to 8.5 mph, an

underwater video camera, and viewing monitors, body weight-support harness system, adjustable temperature control, and jets that propel water and can be used to resist movement and to challenge a person's balance.

Student-Run Businesses

LIU students learn what it takes to run a business by running a business. Students are involved in every facet of operations, from product selection and marketing to sales management and bookkeeping.

Browse

Browse offers a selection of popular technology brands and products and is an authorized Apple products retailer. Students will find all the tools they need to power their LIU Brooklyn experience, from tablets and notebooks to all-in-one desktop computers and gaming consoles, as well as accessories. Students will benefit from the IT help desk, which they can use as a resource for technological needs and questions. In addition, students working in the store will gain expertise as they work alongside certified Apple service help desk technicians.

Browse is a Dell university campus store and special discounts are available for LIU Community members.

Canteen

Canteen is the official spirit store of the Roc Nation School of Music, Sports, and Entertainment. Canteen sells Roc Nation school and Shark Nation apparel, gifts, and items to students and community members.

All proceeds from canteen store sales benefit Roc Nation Hope Scholars. The Roc Nation Hope Scholarship program provides tuition to 25% of enrolled students at the Roc Nation School of Music, Sports & Entertainment. Roc Nation School students work in canteen allowing them to earn work-study funds for their education.

Trading Floor

Featuring Bloomberg Terminals, the global benchmark for financial data and analysis, the Trading Floor gives students the tools to analyze financial markets, assess economic scenarios and interpret the key news developments that impact the global economy. All students in the school are encouraged to get Bloomberg Certified, a credential that can give them an advantage in the competitive job market.

STUDENT SERVICES AND RESOURCES AT LIU BROOKLYN

LIU offers a variety of support services to aid students in achieving their personal and professional goals and make the most of their educational experience. This includes programs designed to serve a diverse variety of students at various stages of their development and address a broad range of individual needs and challenges.

LIU Promise primarily works with first-year students as well as some transfer students and continues to provide guidance and support through graduation. Graduate students and some upper-class students are served through the Office of Enrollment Services as well as advisors within their home departments. Working in concert, LIU Promise, Enrollment Services, and Campus Life strive to accommodate the entire LIU student body and promote student retention.

Using the My LIU portal at <https://my.liu.edu>, you can view your financial aid status and account activity, make online payments, schedule appointments with LIU Promise Success Coaches or Enrollment Services Coaches, and view "to do" items and "holds" that need to be resolved to continue the enrollment process. Additionally, LIU Promise Success Coaches and Enrollment Services Coaches will provide both you and your family continuous support and service throughout your time as an LIU student.

Student Success

The LIU Promise is our commitment to ensuring students have the right tools, guidance, and support to achieve their goals. When you apply to LIU, you will be assigned an LIU Promise Success Coach who will be there for you through graduation. Your coach will be the point of contact for everything you need—from academic and career counseling to campus activities to financial aid. It's our promise to help you chart your success!

Your LIU Promise Success Coach will work with students one-on-one to:

- Fast-track the enrollment process
- Help you select the right major
- Find the right scholarships for you
- Construct a financial plan to fund your education
- Introduce you to our vibrant campus life
- Identify internships and study-abroad opportunities
- Create an e-portfolio to showcase your work
- Launch your career, connecting you with employers before graduation

LIU Promise Career Success provides a comprehensive array of career services and programs to help LIU Brooklyn students navigate the career planning process and prepare for their professional careers. Students should meet with a

coach often during their college years to successfully navigate the career planning process and utilize Handshake, our online internship/job database, and our career management system.

Contact LIU Promise

Pratt 321, 1 University Plaza
718-488-1042

Disability Support Services

Disability Support Services (DSS)

Disability Support Services, housed in the Learning Center, provides advocacy and coordination services at no charge to students with all types of disabilities including physical, neurological, emotional, social, specific learning disability, attention deficit disorder, and students with temporary impairments. Students are assisted in arranging reasonable accommodations as mandated by federal/state laws, Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act As Amended (ADAAA).

Policy for Students with Disabilities

In compliance with federal and state laws, LIU is committed to providing qualified individuals with disabilities the opportunity to participate in all university programs and activities, curricular and extracurricular, which are available to non-disabled individuals.

Students with disabilities who desire accommodations must submit appropriate documentation of their disability to the office of Disability Support Services (DSS) located in the Learning Center. Professional staff will review and evaluate this documentation, interview the student, and provide the student with completed accommodations forms for presentation to the teaching faculty. Campus departments will be notified, as necessary, of the need for additional accommodations noted in the student's documentation. Accommodations forms must be obtained each semester before the semester begins. All disability-related files are confidential.

Accommodations

Academic accommodations are provided to students with disabilities by their individual professors within the academic departments. Accommodations will be made by other campus departments as required for non-academic matters. Accommodations will be considered reasonable when they do not fundamentally alter the nature of a program, course, or service or present an undue administrative burden on the university. Students requesting accommodations are required to submit documentation to verify eligibility under the Americans with Disabilities Act, As Amended, and Section 504 of the Rehabilitation Act of 1973. Appropriate documentation of the disability must be provided so that DSS can: 1) determine the student's eligibility for accommodation; and 2) if the student is eligible, evaluate appropriate academic and/or non-academic accommodations. Disability documentation must include a written evaluation from a physician, psychologist, or other

qualified specialists that establish the nature and extent of the disability and includes the basis for the diagnosis and the dates of testing. The documentation must establish the current need for accommodation.

Determining Eligibility

Accommodations are determined on a case-by-case basis, taking into account the needs of the student, and the course standards. The determination of appropriate and reasonable accommodation is based on approved documentation and through interaction with the student. Specifically, accommodations are determined by the Learning Center in consultation with the student and with input from the faculty and staff, as needed.

In reviewing the specific accommodation requested by the student or recommended by the physician/evaluator, DSS may find that while a recommendation is clinically supported, it may not be the most appropriate accommodation. In addition, Disability Support Services may propose clinically supported accommodations that would be appropriate and useful for the student, but which neither the student nor the evaluator has requested.

Denial of Accommodations

The university reserves the right to deny services or accommodations in the event the request is not clinically supported. If the documentation provided by a student does not support the existence of a disability or the need for a requested accommodation, the student will be so advised. Students will be given the opportunity to supplement the initial documentation with further information from a physician, psychologist, or other specialists.

The university is not required to provide an accommodation that compromises the essential requirements of a course or program, that is unreasonable, or that poses a direct threat to the health or safety of the student or others.

Student Appeal

A student who disagrees with the Learning Center determination of eligibility or accommodation is encouraged to meet with an administrator to resolve the matter informally. Students may appeal the denial of the DSS determination to the dean of students.

Student Veterans Resource Center

Long Island University has a proud and distinguished history of serving its nation's military veterans, active duty service members, and their families. The Long Island University Student Veterans Resource Center (SVRC), facilitated by LIU Promise, provides the resources that veterans need to pursue their education while balancing the demands of life both inside and outside the classroom.

For additional information and resources for veterans, please visit the Student Veterans

Resource Center (SVRC) in S-235. The Veterans School Certifying Official can be reached at 718-488-1200 or by email at studentaffairs@liu.edu.

English Language Institute

Phone: 718-488-1323; 718-780-4361

E-mail: bkln-esl@liu.edu;

Location: LLC, 4th Floor

Hours: Monday – Thursday, 9 a.m. – 6 p.m.

Friday, 9 a.m. – 5 p.m.

The English Language Institute offers both intensive and part-time English language programs for international students, visitors and tourists, immigrants, and refugees who wish to improve their English language skills. Classes include conversation and listening, reading and vocabulary, grammar, and writing. Full- and part-time exam preparation courses for the TOEFL (Test of English as a Foreign Language) and IELTS (International English Language Testing System) are also offered, as well as elective classes in Pronunciation Practice, Job Preparation, and Idiomatic Expressions and Phrasal Verbs, among others. Half-semester, quarter-semester, and University Preparation programs are also available, as well as classes for Au Pairs. Classes are taught mornings, afternoons, and evenings, Monday-Thursday, throughout the year; F-1 (student) visas and financial aid are available for qualified students. The English Language Institute is located in the Library Learning Center, 4th Floor.

International Student Services

The University is home to international students from countries around the globe. The Division of Student Affairs is committed to providing a supportive and exceptional student experience for all international students. International Student Services, housed within Enrollment Services, coordinates international student orientation, programming, and resources.

The Primary Designated School Official (PDSO) and Designated School Officials (DSOs) work with each international student on all immigration and related matters during their time enrolled as a student. These staff members are also a source of reference for international students on F-1, M-1, and J-1 visas.

Bookstore

Barnes and Nobles is the official bookstore for Long Island University. The bookstore is where students can purchase or rent their textbooks. In addition, the store carries Long Island University and Shark Nation apparel, gifts, accessories, supplies, and electronics.

Textbook requirements can be viewed via the online ordering system. Students may choose to purchase their textbooks through this system or take the International Standard Book Number

(ISBN) and purchase their books from a different vendor. Textbooks purchased through the LIU online bookstore are delivered to LIU bookstore.

Visit the bookstore at www.liunetbrooklyn.bncollege.com

Public Safety

Emergencies: 718-488-1078

Non-Emergencies: 718-488-1078

The Department of Public Safety at LIU Brooklyn is located at the rear of the Metcalfe building, opposite the Pharmacy building. The department has a full-time staff that consists of a director, three tour commanders, three lieutenants, three desk sergeants, 45 public safety officers, and an administrative assistant. Public safety officers are licensed by the State of New York and are trained, certified, and registered pursuant to the New York State Security Guard Act of 1992. The department serves the campus 24 hours a day, 7 days a week year-round, and may be reached by dialing 1078 on-campus telephones (add prefix 488 when using outside lines).

The Department of Public Safety is concerned with the welfare and safety of all members of the campus community and their guests. The activities of the Department of Public Safety are enhanced by its close relationship with the 84th and 88th Precinct, which shares the responsibility of maintaining law and order on the campus. This agency often notifies the department of any off-campus arrest involving members of our campus community if there is a perceived threat to the welfare of the other members.

Public safety officers are not peace officers, but they do handle criminal acts and crime scenes until the police department arrives. Suspects are identified and detained for action by the arriving police personnel.

Annual Campus Security Report

In accordance with the provisions of the Jeanne Cleary Act, LIU Brooklyn's annual security report includes statistics for their previous three calendar years concerning reported crimes that occurred on campus; in certain off-campus buildings or property owned or controlled by LIU Brooklyn; and on public property within, or immediately adjacent to and accessible from, the campus. The report also includes institutional policies concerning campus security issues, such as those concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assaults, hate crimes, and other relevant matters.

The Advisory Committee on Campus Safety will provide upon request all campus crime statistics as reported to the United States Department of Education.

Emergency Management

LIU Brooklyn's Department of Public Safety offers comprehensive services in emergency response and management to ensure the safety of our students, faculty, and staff. Through several

initiatives, the campus is prepared for a wide array of emergency situations, ensuring prompt notification and protection of the campus community whether the event is commonplace or extraordinary. In the event of an emergency, LIU Brooklyn's Emergency Notification System is enabled to instantly and simultaneously contact LIU Brooklyn students, faculty, and staff via Long Island University email, Web site notifications, and text messaging to those who register their cell phones with the university. Emergency Building Managers assist Public Safety in disseminating information in their designated building and have been trained in "Evacuation" and "Shelter-in-Place" procedures. LIU Brooklyn employs the use of an outdoor siren warning system.

Efficient snow and emergency school closings system is in place to ensure our students are informed of closings immediately via the LIU Brooklyn homepage, our emergency closings hotline (718-488-1000 or 718-488-1078), as well as local radio and television stations.

Information Technology

Information Technology's (IT) role includes academic and administrative computing services that facilitate and fosters technology innovations across the institution - moving the university ahead of the technology curve to build a competitive edge in higher education and to offer modern tools to our students, faculty, staff members and administrators.

The Office of Information Technology is responsible for managing all aspects of the university's information technology operations, including academic and administrative systems and computing, databases, dashboards, networking, audiovisual, video and telecommunications infrastructure, academic computer labs, and smart classroom spaces. IT provides facilities technical support to campus residence halls and special off-campus programs. IT also maintains the campus' security camera systems, cafeteria and retail space cash registers, campus videoconferencing and campus plasma displays, electronic and web signage.

Information Technology also provides oversight for university-wide information systems, compliance, and security in accordance with policies set forth by University Counsel. Information Technology collaborates with Academic Affairs to implement a unified, comprehensive learning management system and online education initiatives. Information Technology also manages business process improvement initiatives across the university. Each residential campus has a fully-staffed Information Technology helpdesk centralized through Browse, LIU's technology store.

Browse

As a further extension of the university's commitment to providing students with unique, real-world learning opportunities, LIU Information

Technology launched Browse, LIU's on-campus technology store, an authorized technology products retailer that offers popular technology brands and products, from tablets and notebooks to all-in-one desktop computers and gaming consoles, as well as accessories, at discounted rates for LIU faculty, students, and staff with a valid LIU ID. Students have the opportunity to learn about retail, customer service, business management, entrepreneurship, small business operations, supply chain management, e-commerce, as well as networking and technology troubleshooting, and other work experience that helps them to build a professional résumé prior to graduation. Students are encouraged to come to Browse for helpdesk support issues. For more information, feel free to email: Browse@LIU.edu.

Instructional Technology Centers

LIU's Instructional Technology Resource centers promote excellence in teaching throughout the university. This includes face-to-face, online, and blended settings. Our mission is to provide pedagogical support for every situation across campus. The instructional design team provides faculty training on a wide variety of pedagogical issues, curriculum design consultation, and one-on-one support for anyone looking to build or improve outstanding courses. Also, the staff is available to facilitate the utilization of the e-learning management system along with other teaching and learning tools. We also collaborate with administrative offices to create an exceptional teaching and learning environment at LIU.

My LIU

MyLIU is the university's portal that provides students with convenient access to information about their records. By logging into <https://My.LIU.edu>, students may view the schedule of classes, register for courses, obtain their grades, and request transcripts. They may also view financial aid awards, billing information, make online payments, accept and decline Federal Loans and Federal College Work-Study, and make an appointment to see counselors.

Student Email

Each student is assigned a university email address to use for corresponding with university faculty and staff. Students can check their email by logging into <https://My.LIU.edu>. If you have any trouble accessing your MyLIU account, please check with the helpdesk at Browse.

Helpdesk Support

If you have any questions regarding your technology support services at LIU or have a request requiring helpdesk support, please contact visit <https://it.liu.edu>.

Alumni Engagement

Long Island University has an active network of over 270,000 alumni across the globe. Whether students graduate from Brooklyn, Post, or the regional campuses in Brentwood, Riverhead, Rockland, and Westchester Counties, to the former

Southampton campus, the Alumni and Employer Engagement Team continue to support LIU students after their graduation.

Find out more regarding Alumni and Employer Engagement and alumni benefits by visiting liu.edu/alumni.

First Year Seminar (FYS 1)

1 credit course

The First-Year Seminar is designed to help first-time freshmen and transfer students transition into successful members of the LIU community. This includes developing critical thinking, reading and reflective writing skills through the incorporation of the common read and the creation of a digital portfolio. The course is also meant to refine students' approach to college learning and instill a respect and appreciation for the value of liberal arts and science education.

The First-Year Seminar is taught by instructors from various LIU departments, including faculty members, success coaches, and administrators, who work in cooperation with their students' respective coaches to ensure a successful transition to life at LIU.

POLICIES AND REGULATIONS AFFECTING STUDENTS

This section is provided for informational purposes. It should not be construed to be a comprehensive presentation of all policies and regulations that affect students of LIU Pharmacy but rather as a distillation of those policies and regulations of which every student should be aware.

Standards of Professional and Ethical Behavior

Academic Ethics

Students are expected to conduct themselves in accordance with the highest academic standards of honesty and integrity. The acts of, or the intent to engage in the acts of, cheating, plagiarism, illegitimate possession and/or disposition of examinations, and similar acts, are grounds for suspension or dismissal from the university. Students are advised that plagiarism consists of any act involving the offering of the work of someone else as the student's own, including the use of work authored by a paid or volunteer person or organization contracted by the student. Students participating in experiential courses must adhere to all rules and regulations of the specific hospital, long-term care facility, industry site, etc.

LIU Pharmacy Honor Code

I. Statement of Philosophy

As students enrolled in a professional program, pharmacy students of LIU Pharmacy represent the university, the college, and the profession of pharmacy. As such, it is imperative that students conduct themselves in a professional manner, both academically and in any other situation where they are viewed as representatives of the university, the college, and/or the profession. It is imperative that pharmacy students shall be of good moral character and recognize a responsibility to participate in activities contributing to an improved community. Pharmacy students caring for patients must not be harmful, dangerous or negligent to the welfare of the patient. Therefore, standards of professional and ethical behavior have been developed as a guide for students to prepare them to meet the standards of the profession of pharmacy.

With all professions, it is the responsibility of the individual to be aware of all applicable standards (including academic, professional, ethical, and legal) and to follow them to the best of their ability at all times. Not knowing these standards is considered to be unprofessional, and does not provide defense in the case of errors in practice or unprofessional behavior. Therefore, each pharmacy student is required to become

aware of and follow these standards and adhere to the rules and regulations of the university, LIU Pharmacy, the experiential practice sites, and the profession of pharmacy. The elements of the professional commitment required of pharmacy students are outlined in the Pledge of Professionalism taken by pharmacy students, which reads as follows:

“As a student of pharmacy, I believe there is a need to build and reinforce a professional identity founded on integrity, ethical behavior, and honor. This development, a vital process in my education, will help ensure that I am true to the professional relationship I establish between myself and society as I become a member of the pharmacy community. Integrity must be an essential part of my everyday life and I must practice pharmacy with honesty and commitment to service.

To accomplish this goal of professional development, I as a student of pharmacy should:

DEVELOP a sense of loyalty and duty to the profession of pharmacy by being a builder of community, one able and willing to contribute to the well-being of others, and one who enthusiastically accepts the responsibility and accountability for membership in the profession.

FOSTER professional competency through life-long learning. I must strive for high ideals, teamwork, and unity within the profession in order to provide optimal patient care.

SUPPORT my colleagues by actively encouraging personal commitment to the Oath of Maimonides and a Code of Ethics as set forth by the profession

INCORPORATE into my life and practice, dedication to excellence. This will require an ongoing reassessment of personal and professional values.

MAINTAIN the highest ideals and professional attributes to ensure and facilitate the covenantal relationship required of the pharmaceutical caregiver.

The profession of pharmacy is one that demands adherence to a set of rigid ethical standards. These high ideals are necessary to ensure the quality of care extended to the patients I serve. As a student of pharmacy, I believe this does not start with graduation; rather, it begins with my membership in this professional college community. Therefore, I must strive to uphold these standards as I advance toward full membership in the profession of pharmacy.”

The standards of academic conduct, outlined in the sections that follow, apply not only to students enrolled in the professional program but also to students enrolled in any of LIU Pharmacy's graduate programs. As such, violations of the Honor Code by students enrolled in these programs are handled in a manner similar to that of students enrolled in the professional program.

II. Academic Integrity

Students shall deal honestly with people, including colleagues, faculty, university representatives, patients, and healthcare providers.

Students are expected to demonstrate honesty and integrity throughout all aspects of their education. Specifically, students are responsible for:

- Understanding the types of conduct that are deemed unacceptable and, therefore, are prohibited by this policy
 - Refraining from committing any act of cheating, plagiarizing, facilitating academic dishonesty, abusing academic materials, stealing, professional misconduct, or similar activities
 - Maintaining a “duty to report” every instance in which students may have knowledge that academic misconduct has occurred; the student must report any infraction of the Honor Code to a faculty member or other appropriate authority (i.e., course coordinator, preceptor, etc.)
- Examples of academic dishonesty include, but are not limited to, the following:

Cheating

- Use of unauthorized assistance during recitation sessions, quizzes, examinations, or pharmacy practice experiences
- Dependence upon the aid of unauthorized sources in writing papers, solving problems, or completing other assignments
- Acquisition or possession, without permission, of examinations or other academic material belonging to a member of the university faculty or staff
- Multiple submission of work by a student that has been used in an identical or similar form to fulfill any academic requirement at the university or any other practice site
- Provision of assistance to others who are participating in the behaviors or activities mentioned above

Plagiarism/Copyright Infringement

- Paraphrasing without properly crediting the author(s) with footnotes, citations, or bibliographical reference or direct quotation of the work of others without applying quotation marks, and fully and properly crediting the author(s) with footnotes, citations, or bibliographical reference
- Use of materials prepared in collaboration with others without release in writing from the collaborators
- Reproduction of copyright material (e.g., textbooks, handouts, examinations) without obtaining written permission from the copyright owner
- Web-casting/taping or emailing lectures without permission of the faculty member or instructor

For further information about what constitutes plagiarism, the student is referred to: <https://owl.english.purdue.edu/owl/section/3/33>.

Other

- Falsification of signatures, transcripts, grade reports, attendance records, or other official documents
- Provision of false information regarding a missed examination or assignment
- Providing a false statement to any instructor in an attempt to gain an advantage or exceptions
- Reusing, possessing, photocopying, selling, stealing, or soliciting, in its entirety or in part, of instructor-prepared examinations, lecture materials or assignments unauthorized for release to all students

Academic Dishonesty Related to Clinical Practice

- Falsification of a patient's medical records or providing fabricated information regarding a patient's medical status or treatment presented either verbally or in writing
- Multiple submission of assignments from various practice sites

Abuse of Academic Materials

- Destroying or making inaccessible academic resource materials. Examples include, but are not limited to the following:
- Destroying, hiding, or otherwise making unavailable for common use library, computer, personal digital assistants (PDAs), or other academic reference materials
- Destroying, hiding, or otherwise making unavailable, another's notes, experiments, computer programs, or other academic work

Representation

A pharmacy student shall accurately represent himself/herself to others, including, but not limited to, colleagues, faculty and staff of the university, patients, preceptors, and other healthcare providers.

III. Professional Integrity

A student must not be harmful, dangerous, or negligent to the mental or physical health of patients, colleagues, faculty, or the public. Students must be familiar with and abide by the rules and regulations of their assigned experiential practice sites, as well as federal, state, and local laws pertaining to the practice of pharmacy.

Demeanor

The student is expected to be thoughtful and professional when interacting with faculty, patients and their families, physicians, preceptors, other students, and other members of the healthcare team. Likewise, students must be respectful of and adhere to LIU Pharmacy's rules and regulations.

Inappropriate behavior includes, but is not limited to:

- Absence from, or lateness to, required College professional activities
- Use of offensive language or gestures
- Intimidation or coercion of fellow students, faculty, staff, and patients
- Posting of offensive and/or unauthorized

material on websites where the students are identified as being from LIU Pharmacy

- Defacing university property
- Members of LIU Pharmacy are expected to comply with the College policies regarding food and drink in the classroom or clinical setting.
- Smoking is not permitted in any part of the LIU Pharmacy indoor facilities.

Appearance

Students shall maintain a neat, clean appearance, and dress in attire that is appropriate for the setting. While in practice experiences and during official college professional events, students must be dressed in professional attire. For men, this includes a dress shirt, tie, and dress slacks or neat-appearing khaki pants. Women should be similarly appropriately and conservatively attired such as in a blouse with skirt or dress pants, or in a dress. Sneakers, open-toe shoes of any kind, work boots or shoes that look like work boots, T-shirts, shorts, and jeans of any color are examples of what is not permitted. In the classroom, students should be dressed in clothes that are clean and neat and are not considered offensive or embarrassing to the faculty or students. Additional/specific dress code requirements may be outlined in individual course syllabi.

Impairment

The student will not use alcohol or drugs in ways that impair their ability to perform required work or result in compromised patient care. When a student uses a medication that may impair their ability to care for patients, it is their responsibility to discuss this with their advisor, faculty member, or preceptor at the college or experiential practice site. Students should protect the public from an impaired colleague and assist an impaired colleague in receiving appropriate help with their drug or alcohol problem. Students must also refer to the Alcohol Policy and Regulations, detailed in the LIU Brooklyn Student Handbook.

In addition to the Honor Code, students are expected to follow the policies and procedures for criminal background check and drug screening policies for LIU Pharmacy and, when applicable, the affiliated experiential practice site.

IV. Pledge of Honor

All students are expected to sign the following Pledge of Honor upon matriculation to LIU Pharmacy:

"As a student of the Arnold & Marie Schwartz College of Pharmacy and Health Sciences of Long Island University, I will actively pursue behaviors that are consistent with professional conduct, as outlined in the college's Honor Code. I will maintain a professional relationship with faculty, colleagues, other health care providers, and patients, and will maintain academic integrity, as outlined in the Code. I fully recognize that violation of any of the standards of the Code may

result in disciplinary actions, including possible dismissal from the college."

Students are reminded that failure to sign this document does not relieve them from the professional and academic responsibilities set forth in the LIU Pharmacy Honor Code and/or other documents delineating student conduct and behavior.

LIU Pharmacy Violations of Standards of Professional and Ethical Behavior and Academic Integrity

Students accused of violating the college's standards of professional and ethical behavior and academic integrity may be subject to disciplinary action. Disciplinary actions may include suspension or dismissal from LIU Pharmacy or specific forms of remediation, such as completion of a course on ethics, service requirements to the college, or other not-for-profit or charitable organizations or agencies as the college may specify. A Committee on Professional Conduct, Discipline, and Grievances consisting of members of the faculty and student representation will be convened to hear the accusations and hear defense on the part of the Pharm.D. student. The Committee will be comprised of faculty graduate program instructors and research advisors when the accused is a graduate student. All parties involved may request the presence of other individuals with knowledge pertinent to the case to present evidence. The Committee on Professional Conduct, Discipline, and Grievances will present its finding of fact and recommendations as to the disposition of the case to the Assistant Dean for Academic and Student Affairs (for students enrolled in the Pharm.D. program) and to the Associate Dean of Research and Graduate Programs for students enrolled in M.S. or Ph.D. programs. Students are advised that they may request the presence of counsel for said hearings only for purposes of observation and advisement. Counsel is not allowed to question those appearing before the committee or to advocate on behalf of the student. Decisions of the Committee on Professional Conduct, Discipline, and Grievances and/or the Assistant Dean for Academic and Student Affairs that the student believes may demonstrate arbitrary and capricious treatment or to be fundamentally unfair may be appealed, as a final step, to the Council of Deans of LIU Pharmacy.

LIU Pharmacy Grievance and Disciplinary Procedure

Students at LIU Pharmacy may expect scrupulous regard for their rights as students and individuals and should expect to be treated fairly and with courtesy by all members of the academic community. In any matter in which students feel

that their rights have been violated, or in matters of serious dispute with members of the administration or faculty, students may avail themselves of the following formal grievance procedure:

1. The student will write out a clear statement of the grievance.
2. The student may submit this statement to the staff member involved. The student will be given a written response within a reasonable time.
3. If the student is not satisfied with the response, or initially, if preferred, the student may submit a statement to the appropriate department head. The department head will review the matter and provide the student with a written response within a reasonable time.
4. After a student receives a response from the department head, the disciplinary committee may be convened upon the request of the student, the faculty member, or the administration. This committee advises either the Assistant Dean for Academic and Student Affairs (Doctor of Pharmacy students) or the Associate Dean for Research and Graduate Studies (graduate students) regarding the matter; the respective dean's decision is then communicated to the concerned parties. The appropriate dean may initiate disciplinary proceedings upon request of a faculty member or department head.
5. If still not satisfied, the student may institute a formal complaint with the Dean of the college in which he or she is enrolled. The Dean will review the matter, hear the student and the chair of the committee, and see that the proper action is taken.

This procedure shall be a formal grievance procedure for the resolution of all student grievances and disciplinary matters, including those alleging actions prohibited by legislation.

Policy for Student Complaints Relating to Accreditation Council for Pharmacy Education (ACPE) Standards, Policies and Procedures

ACPE is required to demonstrate to the U.S. Secretary of Education its expectations regarding a program's recording and handling of student complaints. In addition, ACPE must demonstrate a link between its review of complaints and its evaluation of a program in the accreditation process. Therefore, ACPE has adopted the following policy: "The colleges and schools of pharmacy have an obligation to respond to any written complaints by students lodged against the college or school of pharmacy or the pharmacy program that is related to the standards and the policies and procedures of ACPE. The college or school of pharmacy shall establish, implement and maintain a student complaint procedure that

affords the complainant fundamental procedural due process. The college or school of pharmacy should communicate the complaint policy to students. The college or school of pharmacy, or the pharmacy program, shall maintain a file that contains the written complaint, a written record of each step of the complaint procedure, and the outcome, except as otherwise prohibited by state or federal law. The files shall be made available for inspection to ACPE on on-site evaluations, or otherwise at ACPE's written request. The findings of this inspection, and the resulting implication(s) to the accreditation of the professional program, shall be noted in the Evaluation Team Report." In order to comply with the ACPE policy regarding student complaints relating to ACPE standards, policies, and procedures, the policy of LIU Pharmacy is to provide:

1. Student access to ACPE standards, policies, and procedures
2. Communication of complaint policy to students
3. Procedure for student complaints

Student Access, Posting, and Communication of Policy

A copy of ACPE standards, policies, and procedures and a copy of the LIU Pharmacy policy relating to this issue are available in the Office of the Dean. It is available for review by any student enrolled in LIU Pharmacy, but may not be removed from the Office of the Dean.

A copy of ACPE standards, policies, and procedures is also available on the ACPE website, www.acpe-accredit.org. The following shall serve as the notification to students of the complaint policy and the procedure for student complaints:

Complaint Policy and Procedure for Student Complaints

The grievance procedure for students shall require a formal written complaint describing the specific violation of ACPE standards, policies, or procedures. The written complaint should include a description of the ACPE standard, policy, or procedure in question; grounds for appeal; a summary of the argument; and supporting evidence. This shall be delivered to the Office of the Dean of LIU Pharmacy. Upon receipt of a written complaint, an ACPE Grievance Committee shall be convened to review the complaint. A formal, written reply to the student(s) from the Grievance Committee shall include an evaluation of the complaint, a description of any violations, and a proposal for any necessary corrective action. This process shall usually take no longer than 90 days. Decisions of the Grievance Committee that demonstrate arbitrary and capricious treatment or are fundamentally unfair may be appealed, as a final step, to the Dean of LIU Pharmacy. This process is the sole avenue for student complaints regarding ACPE standards, policies, and procedures.

A record containing student complaints and written records of the complaint procedure and

outcomes shall be maintained in the Office of the Dean of LIU Pharmacy, and shall be available for review by ACPE or its representatives upon written request or in the process of an on-site evaluation visit.

LIU Pharmacy Official Correspondence

Every student is required to report his or her correct residential address to the LIU Brooklyn Office of Enrollment Services. This address must be the student's actual residing address while in attendance at LIU Pharmacy. Reporting the parent's address is not acceptable unless the student is currently in residence with the parent. Address changes should be submitted to the Office of Enrollment Services within three days of a change of residence.

Official correspondence from LIU Pharmacy that is intended for delivery by the United States Postal System by first class, third class, or other classes of mail will be mailed to the address the student lists with the Office of Enrollment Services.

Official correspondence from the college is also regularly sent to students by electronic mail. Every student of LIU Pharmacy is considered to be on notice of the information contained in email messages sent by the college to the student's official email address. All students of LIU Pharmacy are assigned an official LIU email alias (typically firstname.lastname@my.liu.edu) that serves as the official LIU email address. Official email correspondence from LIU Pharmacy is sent to that address.

LIU Pharmacy Picture Student Identification

All students of LIU Pharmacy are expected to obtain and retain an official LIU Brooklyn student identification card that bears their individual photograph. In addition to other uses on campus, students in the college are expected to present this form of identification at the start of most examinations administered by the college.

TUITION AND FEES

Students are billed for tuition and fees at the time of registration. Room and board charges are reflected at the time of room assignment. Students must make satisfactory payment arrangements prior to the start of each term or before moving into residence halls to remain in good financial standing.

Acceptable payment arrangements include:

- Payment in full using check or credit card;
- Approved financial aid covering all charges;
- Enrollment in an online University Payment Plan; and/or
- Participation in an approved third-party payment agreement.

A student who complies with any combination of the above shall be considered in good financial standing, so long as all conditions are met throughout the term. All payment arrangements must be completely satisfied or late payment fees and/or penalties will be applied to your account. Students who fail to make satisfactory payment arrangements on delinquent past-due balances may be referred to an outside collection agency or attorney, where additional fees and penalties may be charged to their account (up to 30 percent of unpaid charges), including reasonable attorney's fees, as permitted by applicable law. Accounts referred to outside collection agencies may also be reported to one or more of the national credit bureaus. All policies can be found online at www.liu.edu/enrollment-services.

Rate Schedule

Application Fee (non-refundable)	\$ 50
Tuition Deposit (non-refundable)	500
Pharm.D.:	
Years 1-2, per term	18,963
Years 1-2, per credit (less than 12 credits)	1,183
Years 3-5, per term	22,422
Years 3-5, per credit (less than 12 credits)	1,403
Year 6, per credit	1,260
Community IPPE (PHM 400) per term	1,665
Institutional Practice IPPE (PHM 500) per term	1,665
Master's Degree and Graduate Studies, per credit	1,506
Pharmacy, Ph.D., per credit	1,535
Professional Fee, per term	50
Malpractice Insurance Fee, per term (years 3-6)	15
Dining Dollars, 9+ credits, per term	75
University Fee:	
12+ credits, per term	997
Less than 12 credits, per term	499
Other Fees:	
Orientation Fee (optional, non-refundable)	275
Maintenance of Matriculation Fee	250
First and Second Late Payment Fee	100
Third Late Payment Fee	150
Late Registration Fee	50

Returned Check/Credit Card Chargeback Fee	25
Replacement Student ID Card	25
Diploma Replacement Fee	35
Official Transcript, on-demand, per request	25
Official Transcript, online, per request	15

Residence Life Rates

Fall/Spring Accommodations (per term)

Housing Deposit (non-refundable)	\$ 300
Conolly Hall:	
Standard Single	8,933
Standard Double	4,763
Suite Double	5,349
Suite Quad	5,110
Apartment Double	6,479
Apartment Quad	6,715
490 Fulton Street:	
3-4 Bedroom Apartment	11,413
5-6 Bedroom Apartment	7,633
Intersession Rate:	
Per week	329

Summer Accommodations (per session)

Conolly Hall:	
Standard Single	3,573
Standard Double	2,110
Suite Double	2,140
Suite Quad	2,044
Apartment Double	2,592
Apartment Quad	2,686
490 Fulton Street:	
3-4 Bedroom Apartment	4,566
5-6 Bedroom Apartment	3,046

Fall/Spring Meal Plans (per term)

Residential Meal Plan 1 (unlimited meals plus \$300 dining dollars)	2,866
Residential Meal Plan 2 (14 meals per week plus \$300 dining dollars)	2,629
Residential Meal Plan 3 (10 meals per week plus \$300 dining dollars)	2,381
Residential Dining Dollars	300
Dining Dollars+ Plan (\$200 additional dining dollars)	200
Commuter Meal Plan 1 (25 meals plus \$50 dining dollars)	253
Commuter Meal Plan 2 (50 meals plus \$50 dining dollars)	405

All resident students are required to participate in a meal plan. The Residential Dining Dollars plan is only available to residents in apartments with kitchens. Dining dollars can be used at the point of sale locations across the campus.

Financial Policies

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Payment Due Dates

Term	Bill Available	Bill Due Date
Fall	June 1	August 15
Winter	November 1	December 1
Spring	November 15	January 1

Summer May 1 June 15

Student Bills are subject to change based on modifications made to courses, credit loads, housing, and meal plans. In addition, additional fees or fines may occasionally alter the bill. Anticipated aid and financial aid credits will be visible on a student’s account but are not applied until all requirements have been completed. Financial aid is based on full-time enrollment.

Students may view their anticipated financial aid student account, and make payments via their MyLIU. Visit www.MyLIU.edu and follow the following steps: Main Menu > Self-Service > Campus Finance > View Financial Aid.

The payment gateway is a secure online terminal that allows students to make a deposit, pay a bill, or set up an online payment plan.

Late Payment Assessment

Fall Term Amount

1st Day of Classes	\$100
30th Day of Term	100
60th Day of Term	150

Winter Term

1st Day of Classes	\$150
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Spring Term

1st Day of Classes	\$100
30th Day of Term	100
60th Day of Term	150

Summer Term

1st Day of Classes	\$150
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Liability Calendar

Students are responsible for their course registration, academic liability schedule, and payment deadlines. **Non-attendance and/or non-payment does not constitute official withdrawal from the University.**

Following the Tuition and Fee Liability Schedule, student financial responsibility will be determined based on the date they officially dropped or withdrew from the University.

Traditional Fall/Spring Terms

Withdrawal Date	Liability
Week 1	0%
Week 2	25%
Week 3	50%
Week 4	75%
Week 5+	100%

Summer and Other Sessions Seven Weeks or Greater

Withdrawal Date	Liability
Week 1	0%
Week 2	50%
Week 3+	100%

Summer and Other Sessions Three to Seven Weeks

Withdrawal Date	Liability
Day 1-2	0%
Day 3-5	50%
Day 6+	100%

Winter and Other Sessions Two Weeks or Less

Withdrawal Date	Liability
Day 1	0%
Day 2	50%
Day 3+	100%

Payment Plans

Payment Plans

The University offers students and families the ability to pay your tuition bill in installments using our online payment plan system. These plans can help families budget the cost of tuition and fees by spreading out the cost over a number of payments each term. Enrolling in a payment plan is easy - simply log into the LIU Payment Gateway, enroll in a plan, and make the necessary down payment. You can pay online using a credit card or e-check, knowing your information is secured by industry-leading security features. The payment plan system will automatically notify you if your installments increase or decrease due to changes in your student account.

The University offers the following payment plans each semester:

	Fall Monthly Payment Plan	Spring Payment Plan
Enrollment Fee	\$35	\$35
Enrollment Dates	June 1 - September 15 (Late enrollment through October 31)	December 1 - February 15 (Late enrollment through March 31)
Balance Calculation	All applicable charges, less any approved financial aid. Your plan will automatically recalculate if changes are made to your student account.	
Payment Structure	The payment structure will be equal installments based on the enrollment date of the plan. Your last installment may not be due later than the last month of the semester.	
Down Payment	15%-50% (depending on date of enrollment).	
Late Payment Fee	\$25 if payment is not received within 7 days of the scheduled due date.	
Payment Methods	Mastercard, Visa, American Express, Discover, or ACH; auto deduction options are also available.	
How to Enroll	Log into your MyLIU account and select "Make a Payment." Then log into the LIU Payment Gateway and select "Payment Plans."	
Authorized User Access	Yes. You must first set up an authorized user using their email account. You may have more than one authorized user.	

Student Health Insurance

Long Island University offers a cost-effective Student Health Insurance Plan that provides our students and families with robust medical coverage at school, back home, and while traveling or studying abroad. The plan is fully compliant with Federal Health Care Reform and offers students access to a network of doctors, hospitals, and pharmacies throughout the country. All international students, clinical students, residential students, LIU Global students, and intercollegiate athletes are automatically enrolled in the Plan but can waive participation online.

Beginning on July 1st, students can go to their MyLIU account and click on the "Student Health Insurance" link from the Student Center Home Page to enroll in the Plan, print ID cards, check claims, or waive coverage. Coverage begins on August 15, which represents the start of the plan year, and extends through August 14.

Remember that if you have been automatically enrolled in the plan and wish to waive coverage, you must go online and receive a confirmation by the waiver deadlines listed below. If you require additional assistance, please contact your success coach.

Annual Rate: 2021-22 Academic Year

\$4,100 (may be adjusted before NYS rate approval)

Enrollment Waiver Periods

Annual Plan: July 1 - September 30

Spring Plan: January 1 - February 15

FINANCIAL AID

Long Island University awards financial aid in an effort to help students meet the difference between their own resources and the cost of education. All awards are subject to the availability of funds and the student's demonstrated need. Renewal of assistance depends on the annual reevaluation of a student's need, the availability of funds, the successful completion of the previous year, and satisfactory progress toward completion of degree requirements. In addition, students must meet the published filing deadlines. Detailed information on financial aid is forwarded with the admission application and is also available on the Enrollment Services Office website at www.liu.edu/enrollment-services.

Many awards are granted on the basis of scholastic merit. Others are based on financial need. However, it is also possible to receive a combination of awards based on both. Thus, University scholarships or fellowships may be granted by themselves or in conjunction with student loans or Federal Work-Study employment. In order to receive the maximum amount of aid, students must apply for financial aid by the appropriate deadline.

It is the student's responsibility to supply correct, accurate, and complete information to the Enrollment Services Office and to notify them immediately of any changes or corrections in his or her financial situation, enrollment status, or housing status, including tuition remission benefits, outside scholarships and grants, and state-sponsored prepaid college savings plans.

A student who has received a financial aid award must inform the Enrollment Services Office if he or she subsequently decides to decline all or part of that award. Failure to do so may prevent the use of the award by another student. If a student has not secured his or her award by the close of the drop/add period, the award may be canceled, and the student may become ineligible to receive scholarship or fellowship aid in future years. Determination of financial need is also based on the student's enrollment status – a change in registration therefore may result in an adjustment to his or her financial aid.

Application Process

Students must submit the Free Application for Federal Student Aid (FAFSA), and New York State residents must also complete the New York State Tuition Assistance Program (TAP) application. The TAP application is available on the web when a student completes the FAFSA online. The FAFSA (available online at www.fafsa.ed.gov) is the basic form for all student aid programs. Be sure to complete all sections. Students should give permission on the FAFSA for application data to be sent directly to Long Island University (the LIU federal school code number is

002751 and our New York State code is **0403** for undergraduates and **5403** for graduate students). Entering freshmen should submit the application by February 15 for the fall term or by November 1 for the spring term. Returning students should apply no later than March 1. Students requiring summer financial aid must make an appointment with an Enrollment Services counselor in addition to completing the FAFSA and TAP application.

To be considered for financial aid, students must be classified either as US citizens or as eligible noncitizens, be officially admitted to LIU or matriculated in a degree program, and making satisfactory academic progress toward degree requirements. Students in certain certificate or diploma programs may also be eligible for consideration. Generally, University-administered aid is awarded to full-time students. Part-time students (fewer than 12 but at least 6 credits per semester) may be eligible for Federal loans but must also maintain satisfactory academic progress. Part-time undergraduate students may also be eligible for Aid for Part-Time Study (APTS) (New York State residents only—a separate application is necessary) or for Pell Grants.

RENEWAL ELIGIBILITY

Financial aid awards are not automatically renewed each year. Continuing students must submit a FAFSA each year by the LIU deadline, continue to demonstrate financial need, make satisfactory progress toward degree requirements, and be in good academic standing. For institutional scholarships, students must generally maintain full-time enrollment and a cumulative GPA of 3.2 to have their awards renewed. Any break in enrollment without an approved deferment on file with the Enrollment Services office will result in a loss of your scholarship. Please visit our renewal policy on the web at www.liu.edu/enrollment-services.

WITHDRAWAL

Those receiving federal aid who withdraw completely may be billed for remaining balances resulting from the mandatory return of funds to the U.S. government. The amount of federal aid "earned" up to that point is determined by the withdrawal date and a calculation based on the federally prescribed formula. Generally, federal assistance is earned on a pro-rata basis.

Awards

UNIVERSITY-SPONSORED AND ADMINISTERED PROGRAMS

Through the generosity of its alumni and other concerned donors, as well as from funds supplied by the federal government, the University can provide an extensive financial aid program for its students. Awards are competitive and based on academic achievement, test scores, and, in most cases, financial need.

SCHOLARSHIPS AND GRANTS

Long Island University maintains an extensive program of scholarships and grants-in-aid based on

academic merit and demonstrated financial need. Awards are made during the admissions process. Institutional scholarships may be combined with government-supported grants and loans into a single financial aid package. Scholarships and grants are normally applied to tuition and fees; they can range from \$500 to full tuition and fees and do not require repayment.

Long Island University's scholarship programs are designed to reward students who demonstrate outstanding academic achievement. We are committed to providing you with an affordable, high-quality education. Awards are given to students who demonstrate academic achievement, athletic talent, or strong leadership as well as performers and artists. Aid is also awarded based on financial need.

PART-TIME EMPLOYMENT

Handshake – Student Career & Job Portal

Many financial aid award packages include work-study. This means that students are eligible to participate in the Federal Work-Study Program and may earn up to the amount recommended in their award package. Work-study wages are paid directly to the student on a bi-weekly basis and are normally used for educational expenses. On-campus and off-campus jobs and internships are available through Handshake at <http://handshake.liu.edu>. It is not necessary to be awarded work-study earnings to use Handshake.

Resident Assistantships

Resident assistants reside in the residence halls and are responsible for organizing, implementing, and evaluating social and educational activities. Compensation includes a residence hall room. The position information may be obtained from LIU Promise.

ALL OTHER SOURCES OF AID

STATE GRANTS

New York State and other states offer a variety of grants and scholarships to residents. Although the application is made directly to the state and grants are awarded by the state, the amount each student is expected to receive is estimated and taken into account by the University when assembling the student's financial aid package.

LIU's New York State school code is **0403**. For complete information, contact the New York Higher Education Services Corporation (HESC) at 888-697-4372, or visit their website at www.hesc.ny.gov.

New York State Tuition Assistance Program (TAP)

Legal residents of the state of New York who are enrolled in a full-time undergraduate degree program of at least 12 credits per term, or the equivalent, may be eligible for awards under this program. The award varies, depending on income and tuition cost. Students applying for TAP must do so via FAFSA (see earlier "How to Apply" section). Submit the completed application as instructed. For more information about TAP, visit www.hesc.ny.gov/pay-for-college/apply-for-financial-aid/nys-tap.html.

New York State Enhanced Tuition Awards (ETA)

Enhanced Tuition Awards of up to \$6,000 are available for resident students enrolled in a private college in New York State. Awards will be phased in over three years, beginning for New Yorkers making up to \$125,000 adjusted gross income. ETA recipients can receive up to \$6,000 through a combination of their TAP award, ETA award, and a match from LIU. Students are eligible to get an award for up to four years when pursuing a bachelor's degree. Students in an undergraduate program of study normally requiring five years (HEOP) are eligible to receive the award for five years. Award recipients need to earn a passing grade to maintain their Enhanced Tuition Awards, provided they earn a total of 30 credits over the course of a year. Students with disabilities under the ADA are allowed to attend on a part-time basis and their award will be prorated.

States Other Than New York

Some students from outside New York State may qualify for funds from their own state scholarship programs that can be used at Long Island University. Contact your state financial aid agency (call the Federal Student Aid Center at 1-800-433-3243 for the address and telephone number) for program requirements and application procedures. When you receive an eligibility notice from your state program, you should submit it to Enrollment Services in advance of registration.

FEDERAL GRANTS AND BENEFITS

Pell Grant Program

The Federal Pell Grant Program assists undergraduate students who demonstrate financial need according to economic criteria and program requirements established by the federal government. To be eligible, you must enroll in a degree or approved certificate/diploma program and be matriculated for your first bachelor's degree. (You are not eligible if you have already completed a bachelor's degree.)

Federal Supplemental Educational Opportunity Grants (SEOG)

These federally funded grants are awarded to undergraduates whose financial need is substantial. All FAFSA filers who meet our published deadlines and qualify are automatically considered for this grant. However, funds for this program may be limited and are based on availability. To qualify, students are encouraged to submit their FAFSA by the University's established priority date.

Veterans Benefits

Various programs provide educational benefits for spouses, sons, and daughters of deceased or permanently disabled veterans as well as for veterans and in-service personnel who served on active duty in the United States Armed Forces after January 1, 1955. In these programs, the amount of benefits varies. Applications and further information may be obtained from the student's regional office of the Department of Veterans Affairs. The University participates in the Yellow

Ribbon Program. Additional guidance may be obtained from Enrollment Services or at the US Department of Veterans Affairs website at www.benefits.va.gov/GIBILL

SCHOLARSHIPS AND GRANTS FROM OTHER ORGANIZATIONS

In addition to the sources of gift aid described above, students may also be eligible for a private scholarship or grant from an outside agency or organization. Some sources to explore are employers, unions, professional organizations, and community and special interest groups.

FEDERAL LOANS

Federal Direct Student Loan Program

The Federal Direct Student Loan is obtained from the U.S. Department of Education. The total amount borrowed in any year may not exceed the cost of education minus the total family contribution and all other financial aid received that year.

Federal Direct loan payments are co-payable to LIU and the student, and funds are applied first to any outstanding balance on the student's account. An origination fee will be deducted from the loan funds. Students may qualify for both subsidized and unsubsidized Direct loans. The interest on the Federal Direct Subsidized Loan is paid by the US government while the student is in school and remains enrolled at least half-time. The Federal Direct Unsubsidized Loan terms and conditions are essentially the same as the subsidized loan except the federal government does not pay the interest while the student is in school. Instead, the interest is accrued and added to the principal of the loan. Subsidized Direct loans are based strictly on financial need. During the first year of study, a student may borrow up to a total of \$5,500 (combined subsidized and unsubsidized), with no more than \$3,500 as the subsidized amount. In subsequent years, the total is increased to \$6,500 for sophomores (with no more than \$4,500 as the subsidized amount), \$7,500 for juniors and seniors (with no more than \$5,500 as the subsidized amount), and \$20,500 unsubsidized loan for graduate students. For independent undergraduate students and some dependent undergraduate students whose parents do not qualify for a PLUS loan, the Federal Direct Unsubsidized Stafford Loan Program offers yet more borrowing eligibility.

For details about additional unsubsidized amounts available and the maximum aggregate limits for all Federal Direct loans combined, visit the US Department of Education website at www.studentaid.ed.gov

Federal Direct PLUS Loan Program

The PLUS loan enables parents of dependent undergraduate students to borrow up to the full amount of an LIU education less other aid. There is no aggregate loan limit, and individual lenders will evaluate point history. PLUS loan disbursements are made payable to LIU and the parent, and funds are applied first to the current term's outstanding balance on the student's

account. To apply for a PLUS loan, log into www.studentaid.gov

PRIVATE LOANS

A private (non-federal) loan may be a financing option for students who are not eligible for federal aid or who need additional funding beyond the maximum amounts offered by federal loans. These loans are not guaranteed by the federal government. LIU urges all students and parents to research any lender they are considering for this type of funding and to specifically ask several key questions, including current interest rates; co-signer requirements; repayment options, both in school and out; and whether or not the loan may be sold to another provider.

Each student has the right to select the educational loan provider of their choice. To see your choice of lenders, log onto www.elmselect.com and select Long Island University.

If you have considered applying for a private loan, you may be required to complete the Free Application for Federal Student Aid (FAFSA) (see above for application instructions) for the University to certify your loan eligibility. Private loans that are used to cover prior semesters may require additional information for approval, such as letters certifying indebtedness, attendance verification, official transcripts, etc. As such, when requesting funding for prior terms, be sure to reference the correct academic year on your application.

The basic process involved with securing private loans is the electronic filing of an application, institutional certification, and approval information. The University will assist you in this process and will determine for you the maximum loan amount you will be allowed to borrow based on your estimated cost of attendance and pre-existing financial aid awards.

EMPLOYEE EDUCATION PLANS

Many companies pay all or part of the tuition of their employees under tuition refund plans. Employed students attending the University should ask their personnel officers or training directors about the existence of a company tuition plan. Students who receive tuition reimbursement and LIU employees who receive tuition remission must apply with Human Resources.

Standards for Satisfactory Academic Progress (SAP)

Federal Financial Aid Programs

Federal regulations require students to make satisfactory academic progress (SAP) toward the completion of a degree or certificate program in order to receive Title IV financial aid, which includes the Federal Pell Grant, Federal SEOG, Federal Work Study, Federal Perkins Loan and the Federal Direct Loan Programs. Satisfactory academic progress is measured qualitatively and quantitatively by two components: a student's

cumulative GPA and the number of credits they have earned relative to their year in school and enrollment status.

Satisfactory academic progress is measured annually, at the end of the spring semester, after all grades have been submitted. Students failing to meet the criteria stated below are eligible to appeal this decision if extenuating circumstances played a factor in their academic performance. Examples of such circumstances could include an illness, accident, separation or divorce, or the death of a relative. An appeal must be made in writing to the university and include an explanation of the circumstance(s) that may have adversely affected the student's ability to meet the academic requirements, and the plan or changes that have occurred which will allow them to make SAP in the future. All appeals must be accompanied by supporting documentation, such as a letter from a doctor or attorney. If an appeal is granted, the student will either be placed on probationary status for one semester during which the student must meet SAP guidelines, or must successfully adhere to an individualized academic plan that was developed for them by their academic advisor as part of their appeal. Failure to meet these criteria will result in loss of eligibility for Title IV funds.

Students wishing to receive Title IV financial aid for summer semesters may have these awards evaluated and offered prior to a determination of SAP. All students receiving summer aid will have their SAP evaluated after all spring grades have been submitted. Students not making progress will have their summer aid canceled, and the student will be liable for all tuition and fee charges incurred unless an appeal is filed and granted as outlined above.

The criterion below outlines the progress that is required for a full-time undergraduate student to be considered in good standing:

SAP Completion Requirements

# Credits Attempted	# of Credits Earned
0-29	50%
30-127	67%
128 and above	80%

SAP GPA Requirements

Total Credits Earned	Cumulative GPA Required
0-29	1.8
30-60	1.9
60-127	2.0
128 and above	2.33

The criteria below outline the progress that is required for a full-time graduate student to be considered in good standing:

- **Completion Rate Requirements:** All students must earn at least 67% of their attempted hours. The maximum time frame to complete each

degree varies by department and is outlined herein under the specific degree program.

- **GPA Requirements:** Students who have earned 12 or fewer credits must maintain a 2.5 GPA; students who have earned 13 credits or more must maintain a 3.0 GPA.

Notes:

- Progress standards for part-time students are prorated based upon the criteria above
- Qualifying transfer credits are counted as both attempted and earned credits but have no effect on the GPA
- Grades of W (withdrawal), UW (unofficial withdrawal), and INC (incomplete) are counted as credits attempted but not completed and do not affect the GPA
- Repeated classes will count only once towards credits completed. A student may receive aid for a repeated class that has been successfully completed once.
- Students may not receive federal aid for classwork that exceeds 150% of their degree requirements.
- Any departmental requirements that exceed these standards must be adhered to for the purposes of evaluating SAP.

New York State Awards

Tuition Assistance Program (TAP)

To receive financial aid awards from New York State, including Tuition Assistance Program (TAP) funding, students must meet the academic standing requirements established by the New York State Education Department. These requirements are different than those set forth by the federal government and apply only to New York State awards.

The basic measures for good academic standing for New York State awards include the following:

- **Pursuit of Program:** A student must receive a passing or failing grade (A-F) in a certain percentage of courses each term.
- **Satisfactory Academic Progress:** A student must accumulate a specified number of credits and achieve a specified cumulative grade point average (GPA).

The requirements for meeting these standards increase as the student progresses, and are based upon the number of state awards that the student has already received. Students failing to meet the established criteria are eligible to request a one-time waiver of the academic and/or "C" average requirement(s) if extenuating circumstances played a factor in their academic performance. Examples of such circumstances could include an illness, accident, separation or divorce, or the death of a relative. An appeal must be made in writing to LIU and include an explanation of the circumstance(s) that may have adversely affected the student's ability to meet the academic requirements, and the plan or changes that have occurred which will allow them to make SAP in the future. All appeals must be accompanied by supporting documentation, such as a letter from a doctor or

attorney. If a waiver is granted, the student will be eligible for the state award for the semester for which they were granted the waiver. The student must continue to meet the academic progress and pursuit of program requirements to receive further awards.

The charts below outline the progress that is required for an undergraduate student to be considered in good standing:

Standard Semester-Based Chart

Before being certified for payment:

Semester	Minimum credits accrued	Minimum GPA
1st	0	0
2nd	6	1.5
3rd	15	1.8
4th	27	1.8
5th	39	2.0
6th	51	2.0
7th	66	2.0
8th	81	2.0
9th	96	2.0
10th	111	2.0

Remedial Semester Based Chart

Before being certified for payment:

Semester	Minimum credits accrued	Minimum GPA
1st	0	0
2nd	3	1.1
3rd	9	1.2
4th	21	1.3
5th	33	2.0
6th	45	2.0
7th	60	2.0
8th	75	2.0
9th	90	2.0
10th	105	2.0

Notes:

- All students must be registered for a minimum of 12 credits per semester.
- A student may not receive a New York State award for repeating a class that they have already successfully completed (i.e., the credits for a repeated class for which the student has already received a satisfactory grade will not count towards the full-time requirement).
- The standards that a student must meet are dependent upon when a student first received an award from New York State, as well as their remedial status.
- A student is placed on the chart above based upon their total TAP points received, including any award(s) received at a previous institution(s).
- To continue to receive TAP funding, a minimum number of credits must be completed each term, as well as on a cumulative basis.

- A student must maintain a minimum grade point average (GPA) prior to being certified for a TAP payment. This average increases as the student progresses in payment points.
- All students must have a cumulative GPA of 2.0 (a “C” average) or better after accumulating 24 or more payment points (e.g., 4 full-time semesters).
- A student who is not making progress, and/or is not meeting the “C” average requirement may request a one-time waiver if extenuating circumstances affected their academic performance. A student may only receive this waiver once for New York State awards.

Enhanced Tuition Awards (ETA)

Award recipients selected by New York State must meet the following criteria to remain eligible for ETA awards. Failure to meet these requirements will also result in the conversion of the state portion of your grant into a loan.

- Must meet annual income requirements (\$125,000 or below).
- Must earn a passing grade in your coursework.
- Must be registered for at least 12 credits in the Fall to receive the first payment and earn at least 30 credits by the end of Spring to receive the second payment.
- Must continue to meet New York State residency requirements.
- Students in an undergraduate program of study normally requiring five years (HEOP) are eligible to receive the award for five years. Students with disabilities under the ADA are allowed to attend on a part-time basis and their awards will be prorated.

Graduate Semester Based Chart

Before being certified for payment:

Semester	Minimum credits accrued	Minimum GPA
1st	0	0
2nd	6	2.0
3rd	12	2.5
4th	21	2.75
5th	30	3.0
6th	45	3.0
7th	60	3.0
8th	75	3.0

Notes:

- A student may not receive a New York State award for repeating a class that they have already successfully completed (i.e., the credits for a repeated class for which the student has already received a satisfactory grade will not count towards the full-time requirement).
- A student is placed on the chart above based upon their total state aid received, including any award(s) received at a previous institution(s).
- To continue to receive New York State

funding, a minimum number of credits must be completed each term, as well as on a cumulative basis.

- A student must maintain a minimum grade point average (GPA) prior to being certified for a New York State award payment. This average increases as the student progresses in payment points.
- A student who is not making progress may request a one-time waiver if extenuating circumstances affected their academic performance. A student may only receive this waiver once for New York State awards.

LIBRARY

The LIU Libraries system serves a combined total of over 15,000 students, more than 500 full-time faculty members, and over 1,000 part-time faculty across residential and regional campuses. The university's libraries share many online resources that can be accessed from anywhere at any time via remote access including subscriptions to more than 340,000 online journals; 200 online databases; 266,000 electronic books; and 18,000 files of streaming media. These resources may be accessed via the LIU Brooklyn Library homepage at www.liu.edu/brooklyn-library.

Collectively, the libraries house approximately 628,000 print books and more than 13,000 non-print media items. The collections of all LIU libraries are listed in LIUCAT, the library catalog. Books, journal articles, and other library materials owned by LIU's libraries not available at a particular campus can be requested through LIUCAT and supplied via the interlibrary loan service of the LIU libraries. Items not available at LIU libraries can also be requested through interlibrary loans and brought to campus or delivered electronically. In addition, the LIU Libraries system administers the Digital Commons @ LIU, an open access online repository that preserves, promotes, and disseminates the academic work of LIU students and faculty.

The LIU Brooklyn Library houses a rich collection of books, periodicals, microforms, audio and videotapes, CDs and DVDs, pamphlets, and other materials in support of the campus' educational programs.

The Reference Collection, Reference Desk, and Technical Services departments are situated on the third floor of the Salena Library Learning Center. An information commons, consisting of clusters of computers, provides access to the databases, library catalog, and the Internet. These computers, as well as all other computers in the library, are also equipped with productivity software such as word processing, spreadsheet, and presentation programs. Copies of dissertations and mater's theses may be requested at the Reference Desk.

The Periodicals Department, with a collection of both print and microform titles, is located on the fourth floor, where digital microform readers and printers are available. The Interlibrary Loan, Archives and Special Collections, Rare Book Collection, and the Electronic Services department are also located on the fourth floor. Highlights of the Special Collections include Artist Books Collection, the New York African Society for Mutual Relief Collection, Robert C. Weinberg Collection, and the Seawanhaka Student Newspaper Collection.

The Circulation Desk, Reserve Collection, and the main book stacks are located on the fifth floor. The multimedia collection, media equipment, and a group viewing room are also on the fifth floor, as is the Library's Cyber Lab. The Cyber Lab, a "green" lab, is equipped with computers that provide access to databases, library catalog, and Internet as well as up-to-date word processing, spreadsheet, presentation, and database programs. In addition, the Library's "smart classrooms" are located on the fifth floor. Photocopying machines are available on all three floors of the Library.

The LIU Brooklyn Library is a member of several consortia, which grant both reading and borrowing privileges to LIU students. The Library offers information literacy classes and curriculum-integrated instruction. Library faculty and staff are available to help faculty and students with reference questions and research strategies.

PROFESSIONAL PROGRAM

LIU Pharmacy (The Arnold & Marie Schwartz College of Pharmacy and Health Sciences) offers a Doctor of Pharmacy (Pharm.D.) degree program to prepare students for entry-level pharmacy practice. The program consists of two years of preprofessional studies (offered through LIU Brooklyn's Richard L. Conolly College of Liberal Arts and Sciences) and four years of professional studies. Students may also enter the professional phase after completing another degree as long as admission requirements are satisfied.

PROFESSIONAL PROGRAM FOR THE DOCTOR OF PHARMACY

[Program Code: 21294] {HEGIS: 1211}

Introduction

LIU Pharmacy offers a four-year professional curriculum leading to the entry-level degree of Doctor of Pharmacy (Pharm.D.). Students may enter the professional phase of the program in the Fall semester only.

The Doctor of Pharmacy is classified as a "doctor's degree-professional practice" by the U.S. Department of Education. It consists of at least six full-time years of academic study and includes at least two years of preprofessional and four years of professional preparation.

Degree Requirements

Upon recommendation of the Faculty, and approval by the Board of Trustees, the degree of Doctor of Pharmacy is conferred by Long Island University upon a candidate who has completed the required curriculum, containing a minimum of 219 academic credits. Matriculants must maintain a cumulative and a professional phase grade-point average of at least 2.00 to remain in good academic standing. In addition, all students of LIU Brooklyn, including pharmacy students, are required to demonstrate computer proficiency as a requirement for the attainment of a degree. All entering first-year students are encouraged to take the LIU Brooklyn proficiency examinations in computer literacy before registering. The examinations are administered by the LIU Brooklyn Testing Center and all students must successfully complete these examinations as part of the requirements for a degree. Transfer students are also required to pass these examinations or will be granted appropriate waivers at the time of the evaluation of their transfer credits.

All students of LIU Brooklyn must satisfy the requirements of the Writing Across the Curriculum Program (WAC). To fulfill the minimum WAC requirements, students must complete, in addition to English 16, at least one writing-intensive course in their discipline. The writing-intensive course for the Doctor of Pharmacy program is PHM 420 Principles of Health Behavior and Patient-provider Communication.

The Profession of Pharmacy

Dramatic changes taking place in the healthcare system are creating many new and exciting roles for pharmacists. The pharmacist is now not only responsible for the safe and effective distribution of prescription and nonprescription medication but is also assuming the role of pharmaceutical

therapy advisor and manager, having increasingly more patient-care responsibilities.

The entry-level pharmacist is expected to participate fully in the team-based management of the patient, including the rendering of independent clinical judgments. The pharmacist must be proficient in the search for and retrieval of information from the scientific literature, utilization of complex pharmacokinetic models to determine appropriate doses, development of individualized pharmaceutical care plans, communication with patients and health professionals, documentation of pharmaceutical interventions taking into account patients' knowledge, beliefs, and behavior, pharmaco-economic analysis of alternative pharmaceutical interventions, and justification of services billed to managed health-care organizations and other payers.

Curricular Philosophy

The Arnold & Marie Schwartz College of Pharmacy and Health Sciences

Long Island University

Curricular / Educational Philosophy

In advancement of its mission and vision, The Arnold & Marie Schwartz College of Pharmacy and Health Sciences at Long Island University is dedicated to developing analytically strong and empathetic new pharmacists that practice evidence-based pharmacy utilizing an interprofessional approach to patient-centered care and improving public health. We view the Doctor of Pharmacy curriculum as a tool for the development of these pharmacists. Our approach seeks the following:

- To empower student pharmacists to take a leading role in their own acquisition of knowledge through the use of active learning strategies and foster professional integrity through enforcing high levels of personal accountability throughout the curriculum.
- To deliver the curriculum in an organized, integrated and sequential fashion intended to instill the desired attributes in approaches to problem-solving, critical thinking, and to foster development and integration of the knowledge, skills, attitudes, and values required by the profession.
- To begin the curriculum with an emphasis on pharmacist's roles, progress to a consideration of persons as patients, build in-depth expertise of diverse therapies and approaches to patient care and expand to population-based concepts in practice with a focus on serving as patient navigators, advocates and change agents in the health care delivery system.
- To support the curriculum through the provision of a strong foundation in the biomedical, pharmaceutical, social and administrative, and clinical sciences.
- To further develop and ultimately master the skills of pharmacy students in a diverse set of

pharmacy practice environments through the accompanying experiential curriculum.

- To provide a supporting foundation of continuous professional and personal development in areas such as innovation, leadership, and entrepreneurship and to introduce post-graduate opportunities in residencies, fellowships, and graduate education through the concomitant co-curriculum experience.

As graduates transition into practice, it is intended that they emerge as life-long learners and entrusted, practice-ready professionals prepared to advance the profession by serving as effective members of interprofessional teams and meeting the health care needs of society as empathetic, culturally sensitive, and patient-centered providers.

Learning Outcomes

The Arnold & Marie Schwartz College of Pharmacy and Health Sciences has been a leader in pharmacy education since its founding in 1886.

The college attracts a diverse student population and provides quality pharmacy education through its pursuit of excellence and innovation in teaching, scholarship, and service. The campus environment encourages and promotes creativity, innovation, and collegiality.

Consistent with the mission of Long Island University, the college maintains a strong commitment to access and excellence. In an effort to be consistent with national benchmarks and standards, the College's Learning Outcomes Committee and Curriculum Committee periodically reviews the program ensuring that it adheres to these national benchmarks, guidelines and standards.

In July 2013, at the annual meeting of the American Association of Colleges of Pharmacy, members of the Center for the Advancement of Pharmacy Education (CAPE) presented the fourth iteration of the Educational Outcomes, titled CAPE Educational Outcomes 2013 (prior iterations are CAPE Educational Outcomes 1992, 1998, and 2004). These Educational Outcomes are intended to be the target toward which the evolving pharmacy curricula are to be aimed at by colleges/schools of pharmacy and are part of the 2016 standards of the Accreditation Council for Pharmacy Education. Immediately after the publishing of the CAPE Educational Outcomes 2013, the college's Curriculum Committee engaged in a process of reviewing the CAPE Educational Outcomes 2013 and utilized it for developing new learning outcomes for the college. In a significant departure from prior years where the focus was solely on curricular endpoints, it was realized that the new learning outcomes will not only have to be "curriculum" based but also will need to include outcomes that can be achieved through co-curricular and extracurricular activities. During committee deliberations, it was identified that a detailed glossary of terms would be needed

to assist stakeholders in defining specific terminologies. The glossary follows the learning outcomes.

The learning outcomes serve as the guiding framework for course/curricular review, development of co-curricular and extracurricular activities, mapping, assessment, and remediation efforts of the college. The outcomes are presented in four domains as outlined below.

Domain 1 – Foundational Knowledge

Learning Outcome

1.1. Learner (Learner): Develop, integrate, and apply knowledge from the foundational sciences (i.e., pharmaceutical, social/behavioral/administrative, health, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

Learning Objectives

- 1.1.1. Develop and demonstrate depth and breadth of knowledge in pharmaceutical, social/behavioral/administrative, health, and clinical sciences.
- 1.1.2. Articulate how knowledge in foundational sciences is integral to clinical reasoning; evaluation of future advances in medicine and pharmacy; supporting health and wellness initiatives; and delivery of contemporary pharmacy services.
- 1.1.3. Integrate knowledge from foundational sciences to explain the way specific drugs or drug classes work and evaluate their potential value in individuals and populations.
- 1.1.4. Apply knowledge in foundational sciences to solve therapeutic problems and advance patient-centered care and population-based care.
- 1.1.5. Critically analyze and assimilate evidence from scientific literature related to drugs and disease to enhance clinical decision-making.
- 1.1.6. Identify, critically analyze, and assimilate emerging theories, information, and technologies that may impact patient-centered and population-based care.

Domain 2 – Essentials for Practice and Care

Learning Outcome

2.1. Patient-centered care (Caregiver): Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, foster patient support and empowerment, implement, monitor and adjust plans, and document activities).

Learning Objectives

- 2.1.1. Collect subjective and objective evidence related to the patient, medications, allergies/adverse reactions, and disease(s), by performing patient assessment (including physical assessment, screenings, and risk assessments scores when needed) from chart/electronic health records, pharmacist records, and discussions with other health professionals and the

- patient/family/caregiver.
- 2.1.2. Interpret evidence and patient data.
- 2.1.3. Prioritize patient needs.
- 2.1.4. Formulate an evidence-based care plan, assessment, and recommendation.
- 2.1.5. Implement and/or recommend patient care plans.
- 2.1.6. Monitor the patient and adjust the care plan as needed.
- 2.1.7. Document patient care-related activities.

Learning Outcome

2.2. Medication use systems management (Manager): Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

Learning Objectives

- 2.2.1. Compare and contrast the components of typical medication use systems in different pharmacy practice settings.
- 2.2.2. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication use system (i.e., procurement, storage, prescribing, transcription, dispensing, administration, monitoring, and documentation).
- 2.2.3. Utilize technology that is a component to or of the medication use system.
- 2.2.4. Identify and utilize human, financial, and physical resources to optimize the medication use system.
- 2.2.5. Manage medication needs of patients during transitions of care.
- 2.2.6. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use.
- 2.2.7. Utilize continuous quality improvement techniques in the medication use process and participate in identifying system errors and, when possible, implement solutions.
- 2.2.8. Demonstrate the ability to compound extemporaneous and commercially available dosage forms, dispense, and administer medications in a variety of healthcare settings.
- 2.2.9. Apply legal, ethical, and professional standards within a medication use system.
- 2.2.10. Apply the principles of human resource management to manage pharmacy personnel.
- 2.2.11. Demonstrate knowledge of and an ability to use medical informatics.
- 2.2.12. Demonstrate the ability to apply a systems approach to improve patient (medication) safety.

Learning Outcome

2.3. Health and wellness (Promoter): Design prevention, intervention, and educational strategies for individuals and communities to manage disease and improve health and wellness.

Learning Objectives

- 2.3.1. Describe systematic preventive care, using risk assessment, risk reduction, screening, education, and immunizations.
- 2.3.2. Provide prevention, intervention, and educational strategies for individuals and

- communities to improve health and wellness.
- 2.3.3. Participate with interprofessional healthcare team members in the management of and health promotion for patients.
- 2.3.4. Evaluate personal, social, economic, and environmental conditions to maximize health and wellness.

Learning Outcome

2.4. Population-based care (Provider): Describe the way in which population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

Learning Objectives

- 2.4.1. Assess the healthcare status and needs of a targeted patient population.
- 2.4.2. Develop and provide an evidence-based approach to care that considers the cost, care, access, and satisfaction needs of a targeted patient population.
- 2.4.3. Participate in actual or simulated population health management by evaluating and adjusting interventions to improve health.

Domain 3 --- Approach to Practice and Care

Learning Outcome

3.1. Problem Solving (Problem Solver): Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

Learning Objectives

- 3.1.1. Identify and define all relevant problems.
- 3.1.2. Select between the primary as well as secondary problems.
- 3.1.3. Define goals and alternative goals.
- 3.1.4. Explore multiple solutions by organizing, prioritizing, and defending each possible solution.
- 3.1.5. Anticipate positive and negative outcomes by reviewing assumptions, inconsistencies, and unintended consequences.
- 3.1.6. Recommend and/or implement the most viable solution, including monitoring parameters, to measure intended and unintended consequences.
- 3.1.7. Reflect on the solution implemented and its effects to improve future performance.

Learning Outcome

3.2. Educator (Educator): Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.

Learning Objectives

- 3.2.1. Conduct learning needs assessment of constituents who would benefit from pharmacist-delivered education (e.g., patients/caregivers, technicians and interns, pharmacy students, fellow pharmacists, other healthcare providers, legislators).
- 3.2.2. Develop learning objectives.
- 3.2.3. Select the most effective techniques/strategies to achieve learning objectives.
- 3.2.4. Demonstrate the ability to coordinate educational efforts with other healthcare providers, when appropriate, to ensure a consistent, comprehensive, and team-based encounter.

3.2.5. Ensure instructional content contains the most current information relevant to the intended audience.

3.2.6. Demonstrate the ability to deliver educational messages via various techniques such as one-on-one discussions, oral presentations, and written materials.

3.2.7. Assess audience comprehension of the educational session.

Learning Outcome

3.3. Patient Advocacy (Advocate): Assure that patients' best interests are represented.

Learning Objectives

3.3.1. Empower patients to take responsibility for, and control of, their health.

3.3.2. Assist patients in navigating through the healthcare system.

3.3.3. Assist patients in obtaining the resources and care required in an efficient and cost-effective manner (e.g., triage to social and/or other healthcare services).

Learning Outcome

3.4. Interprofessional collaboration (Collaborator): Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

Learning Objectives

3.4.1. Establish a climate of shared values and mutual respect necessary to meet patient care needs.

3.4.2. Define clear roles and responsibilities for team members to optimize outcomes for specific patient care encounters.

3.4.3. Communicate in a manner that values team-based decision-making and shows respect for contributions from other areas of expertise.

3.4.4. Foster accountability and leverage expertise to form a highly functioning team (one that includes the patient, family, and community) and promote shared patient-centered problem solving.

Learning Outcome

3.5 Cultural Sensitivity (Includer): Recognize social determinants of health to diminish disparities and inequities in access to quality care.

Learning Objectives

3.5.1. Recognize the collective identity and norms of different cultures without overgeneralizing (i.e., recognize and avoid biases and stereotyping).

3.5.2. Demonstrate an attitude that is respectful of different cultures.

3.5.3. Assess a patient's health literacy and modify communication strategies to meet the patient's needs.

3.5.4. Safely and appropriately incorporate patients' cultural beliefs and practices into health and wellness care plans.

Learning Outcome

3.6. Communication (Communicator): Effectively communicate verbally and nonverbally when interacting with an individual,

group, or organization.

Learning Objectives

3.6.1. Interview and/or counsel patients/caregivers using an organized structure, specific questioning techniques (e.g., motivational interviewing), and medical terminology adapted for the audience.

3.6.2. Actively listen and ask appropriate open and closed-ended questions to gather information.

3.6.3. Use available technology and other media to assist with communication as appropriate.

3.6.4. Use effective interpersonal skills to establish rapport and build trusting relationships.

3.6.5. Communicate assertively, persuasively, confidently, and clearly.

3.6.6. Demonstrate empathy when interacting with others.

3.6.7. Deliver and obtain feedback to assess learning and promote goal setting and goal attainment.

3.6.8. Develop professional documents pertinent to organizational needs (e.g., monographs, policy documents).

3.6.9. Document patient care activities clearly, concisely, and accurately using appropriate medical terminology, standardized qualitative and quantitative methods, and/or uniform coding systems.

3.6.10. Participate in the examination of a practice site's commitment, capacity, and efforts to meet the communication needs of the populations served by the practice environment.

Domain 4 – Personal and Professional Development

Learning Outcome

4.1. Self-awareness (Self-aware) – Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

Learning Objectives

4.1.1. Use metacognition to regulate one's own thinking and learning.

4.1.2. Maintain motivation, attention, and interest (e.g., habits of mind) during learning and work-related activities.

4.1.3. Identify, create, implement, evaluate, and modify plans for personal and professional development for the purpose of individual growth.

4.1.4. Approach tasks with a desire to learn.

4.1.5. Demonstrate persistence and flexibility in various situations; engaging in help-seeking behavior when appropriate.

4.1.6. Strive for accuracy and precision by displaying a willingness to recognize, correct, and learn from errors.

4.1.7. Use constructive coping strategies to manage stress.

4.1.8. Seek personal, professional, or academic support to address personal limitations.

4.1.9. Display positive self-esteem and confidence when working with others.

4.1.10. Demonstrate the ability to be a self-

directed lifelong learner.

Learning Outcome

4.2. Leadership (Leader): Demonstrate responsibility for creating and achieving shared goals, regardless of position.

Learning Objectives

4.2.1. Identify, compare, and contrast the characteristics that reflect leadership versus management.

4.2.2. Identify the history (e.g., successes and challenges) of a team before implementing changes.

4.2.3. Develop relationships, value diverse opinions, and utilize individuals' strengths and weaknesses to promote teamwork.

4.2.4. Persuasively communicate goals to the team to help build consensus.

4.2.5. Empower team members by actively listening, gathering input or feedback, and fostering collaboration.

Learning Outcome

4.3. Innovation and Entrepreneurship (Innovator): Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

Learning Objectives

4.3.1. Demonstrate initiative when confronted with challenges.

4.3.2. Develop new ideas and approaches to improve quality or overcome barriers to advance the profession.

4.3.3. Demonstrate creative decision-making when confronted with problems or challenges.

4.3.4. Assess personal strengths and weaknesses in entrepreneurial skills.

4.3.5. Apply entrepreneurial skills within a real or simulated entrepreneurial activity.

4.3.6. Conduct a risk-benefit analysis for the implementation of an innovative idea or simulated entrepreneurial activity.

Learning Outcome

4.4. Professionalism (Professional): Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

Learning Objectives

4.4.1. Demonstrate altruism, integrity, trustworthiness, diligence, flexibility, patience, humility, and respect in all interactions.

4.4.2. Display preparation, initiative, and accountability consistent with a commitment to excellence.

4.4.3. Deliver patient-centered care in a manner that is legal, ethical, and compassionate and free of conflict of interest.

4.4.4. Demonstrate an awareness that one's professionalism is constantly evaluated by others.

4.4.5. Engage in the profession of pharmacy by demonstrating a commitment to its continual improvement.

4.4.6. Display respect for patient privacy, confidentiality, and autonomy.

LEARNING OUTCOMES GLOSSARY

- **Advocacy**—The act of or process of supporting a cause, idea, policy, or person(s).
- **Clinical Sciences**—The areas of the professional pharmacy curriculum focused on the integration and application of the foundational sciences (e.g. pharmaceutical and social, administrative, and behavioral sciences) to improve the human condition through the safe and efficacious use of medications.
- **Competency**—A complex set of behaviors built through the integration of knowledge, skills, and attitudes. A competency is observable, measurable, important, and necessary for the practice of pharmacy.
- **Constructive Coping Strategies**—Consciously working to solve personal and interpersonal problems and minimize or tolerate stress.
- **Culture**—Sharing a collective identity, common history and experience, and shared beliefs, values, and norms.
- **Entrepreneurial Skills**—Skills that entrepreneurs effectively exhibit such as decision-making, strategic thinking, risk-taking, confidence building, communicating ideas, motivating team members, tolerance of ambiguity, taking responsibility for actions.
- **Habits of Mind**—The dispositions that are intentionally used by characteristically successful people when confronted with problems that have no immediately apparent solutions. These dispositions include:
 - Persisting
 - Managing impulsivity
 - Listening with understanding and empathy
 - Thinking flexibly
 - Thinking about your thinking, emotions, and biases
 - Striving for accuracy
 - Questioning with critical curiosity; problem posing
 - Applying past knowledge to new situations
 - Thinking and communicating with clarity and precision
 - Attentively gathering data through all senses
 - Creating, imagining and innovating
 - Responding with wonderment and awe
 - Taking responsible risks
 - Finding humor
 - Thinking interdependently
 - Remaining open to continuous learning
- **Health Literacy**—One of the social determinants of health referring to the degree to which an individual can obtain and process basic health information to understand and make appropriate health decisions.
- **Help-Seeking**—Assessing needs and finding assistance when a deficit is identified that is associated with academic success.
- **Innovation**—The act or process of introducing new ideas, devices, or methods.
- **Interprofessional**—Two or more professions

working together collaboratively.

Interprofessional is contrasted with the term interdisciplinary, which focuses on when two or more fields within the same profession interact.

- **Leadership**—Leadership involves inspiring others. It is a function of knowing yourself, creating a culture of trust and open communication, having a vision that is well communicated, empowering others, taking a broad view of situations, and forming strategic alliances.
- **Management**—Identifying, implementing, and overseeing resources to effectively accomplish specific projects or processes.
- **Medication Use System**—A complex process comprised of medication prescribing, order processing, dispensing, administration, and effects monitoring (e.g., intended or unintended effects).
- **Metacognition**—Knowledge about one’s own thinking processes and consciously planning, monitoring, and evaluating learning.
- **Learning Outcome**—Statements that describe what a learner should be able to do at the end of a program.
- **Patient-centered Care**—Any care that is respectful of and responsive to individual patient preferences, needs, and values, and ensures that patient values guide all clinical decisions.
- **Pharmaceutical Sciences**—The integrative science disciplines (e.g., pharmaceutics, pharmacokinetics, pharmacology, toxicology, and medicinal chemistry) taught in the professional pharmacy curriculum that, collectively explain drug actions. The pharmaceutical sciences build on principles introduced in the preprofessional (chemistry, physics, biology) and biomedical (anatomy, physiology, biochemistry) sciences.
- **Population-based Care**—A comprehensive care approach where practitioners assess the health needs of a specific population, implement and evaluate interventions to improve the health of that population and provide care for individual patients in the context of the culture, health status, and health needs of the populations of which that patient is a member.
- **Population Health Management**—A set of interventions designed to maintain and improve people’s health across the full continuum of care—from low-risk, healthy individuals to high-risk individuals with one or more chronic conditions.
- **Social, Behavioral, and Administrative Sciences**—The disciplines and concepts of public health, epidemiology, economics, financial management, health behavior, outcomes, biostatistics and research methods, law and ethics, healthcare administration, management, and operations, marketing, communications, medication distribution systems taught within the professional

pharmacy curriculum.

- **Social Determinants of Health**—Circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. Examples include age, race/ethnicity, gender, socioeconomic status, health literacy, religious beliefs, disability status, diagnosis, LGBT (i.e., lesbian, gay, bisexual, transgender) status, and geography.
- **Transitions of Care**—The movement of a patient from one setting of care (e.g., hospital, ambulatory primary care clinic, ambulatory specialty care clinic, long-term care facility, home health, rehabilitation facility) to another.

As reflected in these learning outcomes, LIU Pharmacy has defined the general educational and professional outcomes and abilities expected of today’s graduates. The curriculum was designed to prepare students for an entry-level position in any aspect of the profession— e.g., community practice, hospital practice, long-term care, managed care, and the pharmaceutical industry. Moreover, the curriculum prepares students to continue their education through the pursuit of a graduate degree or by participating in residency and/or fellowship programs. Activities encouraging skills required for higher-level thinking, active learning, and life-long learning are liberally sprinkled throughout the curriculum. Students are afforded the opportunity to register for elective didactic as well as elective experiential (selective) courses in order to help them pursue their individual career paths.

The curriculum begins with a minimum of two years of studies in the liberal arts and sciences. Studies in the physical and biological sciences and mathematics in the preprofessional years prepare the student for studies in the pharmaceutical and biomedical sciences in the professional phase of the curriculum. Studies in the humanities and social sciences provide a common and universally accepted body of knowledge all educated men and women are expected to acquire, irrespective of vocational or professional objectives. Thus, the curriculum offers students the opportunity to develop an understanding of the relationships among the arts and sciences and to apply that understanding to human concerns in their professional and personal lives.

The professional phase of the curriculum consists of studies in the pharmaceutical and biomedical sciences that are of such depth, scope, timeliness, quality, sequence and emphasis as to provide the foundation for and support of the intellectual and clinical objectives of the professional program. Most of the courses in the biomedical and pharmaceutical sciences are part of a sequence and, as such, are coordinated within a lock-step approach, i.e., students master a given topic after which additional material is presented to bring the student to a higher level. Within each discipline, the courses are vertically and

horizontally integrated and coordinated to ensure that the curricular endpoints and specific course objectives are met. Studies in the behavioral, social, and administrative pharmacy sciences provide the basis for understanding and influencing human behavior in health and disease, in the management process of pharmacy, and in pharmacy's interrelationships with healthcare systems. Courses in these sciences provide the knowledge, skills, abilities, attitudes, and values necessary for the efficient and effective management of patient-centered practice.

Studies in pharmacy practice develop the understanding of important disease states and rational therapeutics of these conditions. The coursework is designed to develop the abilities of students to utilize pathophysiologic, pharmacotherapeutic and pharmacoeconomic principles to formulate pharmaceutical care plans for patient management. Development of pharmaceutical care plans includes problem identification, data collection and evaluation, implementation of appropriate therapy, and monitoring patient outcomes based upon the patient's biopsychosocial needs. Additionally, studies in pharmacy practice prepare the student to effectively utilize pharmaceutical information sources and databases that are necessary, in the course of pharmacy practice, to physically assess and counsel patients who are about to receive or are receiving medications, and to administer medications via various routes such as injection and inhalation.

The experiential education components of the professional program are of such intensity, breadth and duration as to support the achievement of the curricular endpoints. Experiential education begins virtually the first day the student enters the professional program and continues until graduation. Introductory pharmacy practice experiences are offered during the early sequencing of the curriculum for purposes of providing transitional experiential activities and active learning. The introductory practice experiences begin with a visitation program in the students' first professional semester that provides an orientation to the practice of pharmacy and the provision of pharmaceutical care in a number of environments. Additional introductory pharmacy practice experiences offer students the opportunity to develop pharmaceutical care plans for patients, counsel patients about prescription and nonprescription items, interact with healthcare professionals, and assist in the dispensing of prescriptions.

The advanced pharmacy practice experiences in the final year of the professional curriculum provide students with active participation and in-depth experiences to acquire practice skills and judgment to develop the level of confidence and responsibility needed for independent and collaborative pharmacy practice. These experiences serve as a capstone and require students to utilize all knowledge, skills, attitudes,

and behaviors previously learned. A wide range of advanced practice experiences is offered. The core experiences ensure that students have developed the competency to participate in the drug use decision-making process, to select the correct medication and dosage for a given situation, to interact with healthcare professionals and peers, to communicate with patients and/or caregivers, to solve issues related to the rational use of medications and document them, to utilize drug information skills to respond to queries, to assist pharmacists in dispensing commercially available as well as extemporaneously prepared medications, and to develop in-depth pharmaceutical care plans. The elective advanced practice experiences continue this process, yet allow students to fulfill individual professional needs.

Preprofessional Phase Course of Study

The pre-professional phase of the program, offered through Richard L. Conolly College, consists of a minimum of four semesters of coursework in the liberal arts and sciences. Successful completion of two years of preprofessional study (P1 and P2) provides the foundation for admission to the professional pharmacy curriculum. The course sequence for the pre-professional phase is listed below. For course descriptions, please refer to the LIU Brooklyn undergraduate bulletin.

Credentials of students attending other colleges for the pre-professional phase of the program will be evaluated on an individual course basis, and transfer credit will be granted for those courses meeting the requirements of LIU Pharmacy. Only those pre-professional students who meet the progression requirements, as outlined under the heading of Admissions, will be admitted to the first professional year of study in LIU Pharmacy.

While the pre-professional phase of the program is designed to be completed in two academic years, students requiring proficiency and skills courses may have a lengthened course of study.

The preprofessional pharmacy curriculum consists of the following course of study:

Pre-Professional Studies (Four Semesters)

First Semester

General & Inorganic Chemistry I (CHM 3)	4
General Biology I (BIO 1)	4
English Composition (ENG 16)	3
Introduction to Psychology (PSY 3)	3
*First-Year Seminar (FYS 1)	<u>1</u>
	15

Second Semester

General & Inorganic Chemistry II (CHM 4)	4
General Biology II (BIO 2)	4
English Literature (ENG 61 - 64)	3
Calculus I (MTH 40)	4
Micro/Macro Economics (ECO 1 or 2)	<u>3</u>
	18

Third Semester

Organic Chemistry I (CHM 121)	4
**Physics for Pharmacy (PHY 27)	4
***Writing in the Sciences (ENG 178)	3
Philosophy OR History (PHI 60 / HIS 1 or 2)	3
Human Anatomy & Physiology I (BIO 137)	4
****Pharmacy Orientation Seminar (PHM 1)	<u>0</u>
	18

Fourth Semester

Organic Chemistry II (CHM 122)	4
Human Anatomy/Physiology II (BIO 138)	4
Statistics (MTH 100)	3
Oral Communications (SPE 3)	3
Microbiology (BIO 101)	<u>4</u>
	18

*First-Year Seminar is required of all entering full-time freshman and transfer students with less than 24 credits. Note: If you have an Associate's degree or a Bachelor's degree from a regionally accredited college/university by the end of summer, then any 24 credits in social science/humanities with a grade of "C" or higher will satisfy the requirement.

**General Physics may satisfy the Physics for Pharmacy requirement (compare course descriptions).

*** ENG 178 is a requirement for all students taking their pre-pharmacy courses at LIU. For students taking their pre-pharmacy courses at institutions other than LIU, a second semester of English Composition may satisfy the Writing in the Sciences requirement.

****Pharmacy Orientation Seminar (PHM 1) must be completed in the P1 or P2 year by all LIU pre-pharmacy major students

Early Assurance Program

Early Assurance students who complete the pre-professional phase of study at LIU Brooklyn or Post and meet the stated progression requirements (see below) are offered priority admission in the first professional year (P-3) of the Doctor of Pharmacy program. High school students must submit an application to the LIU Brooklyn or Post Office of Admissions. Priority admission to the doctoral phase of the highly selective PharmD program is contingent upon the successful

completion of the criteria listed below.

- Enroll at Long Island University upon completion of secondary school studies.
- Remain continuously enrolled at LIU in the pre-professional phase.
- Completion of all pre-professional phase courses with a minimum grade of C-.
- Maintain a minimum cumulative GPA of 3.25.
- Maintain a minimum science and/or math GPA of 3.25.
- Perform 20 hours of community service in each academic year of pre-professional study
- Successfully complete an on-site interview during the second year of pre-professional studies.
- Successful completion of a criminal background check and drug screen.
- Adhere to the LIU and LIU Pharmacy Codes of Conduct.

Professional Phase Course of Study

The professional segment of the Doctor of Pharmacy program consists of six semesters of didactic and early experiential coursework and an extramural final year of advanced pharmacy practice experiences, which students complete in hospital, community and other pharmacy practice settings. The professional program provides the specialized education necessary to develop expertise in the ever-broadening field of pharmacy and prepares the student for professional licensure examinations.

All professional courses must be taken in residence. There is no transfer credit for any professional-level course.

All students enrolled in pharmacy courses with an experiential component are required to have satisfactory yearly physical examination reports.

Completed health requirements must be submitted to the Office of Experiential Education by the deadline dates established for each academic term. It is the responsibility of each student to visit a physician and to obtain a physical examination, specific laboratory tests and immunizations at the student's own expense. Students must show proof of quantitative positive titers for rubella, rubeola, mumps, varicella and hepatitis B; proof of vaccination and/or qualitative reports are not acceptable to practice sites for these tests. Additionally, students must show proof of a baseline hepatitis C titer which can be qualitative, laboratory report of baseline urinalysis, CBC(complete blood count), and basic metabolic panel as well as proof of having received appropriate booster doses of diphtheria and tetanus (or Tdap). Students need to obtain a test for exposure to tuberculosis – e.g., a PPD (or Mantoux tuberculin test) or a QuantiFeron – immediately before and then every year during experiential education. If a PPD is performed, a 2-step test is required annually; other assessments during the

year may be with a 1-step procedure if performed within one year of a previous test. A positive Mantoux (PPD) test will require that the student get a chest x-ray and be assessed for the presence of tuberculosis. The decision to treat the student needs to be discussed with the individual physician. In addition, all students are to be tested for syphilis before commencing an experiential course. Students are also required to obtain an influenza vaccine each year (usually due in October).

The College reserves the right to require additional medical tests or documentation it determines are necessary for protecting the health of the student, other healthcare providers and patients. Individual sites affiliated with the pharmacy program may require additional medical information from students and may require that students submit various forms directly to the experiential site prior to beginning an experiential course.

It is the student's responsibility to fulfill these requirements in order to participate in experiential courses. Failure to submit required reports within the specified time period automatically results in a monetary fine and may deny admittance of students to pharmacy courses with experiential components. Students must prove that they are knowledgeable of the Health Insurance Portability and Accountability Act (HIPAA) as it relates to pharmacy and complete appropriate OSHA (Bloodborne pathogen) training. As such, students will complete College-approved HIPAA and OSHA training programs and might need to complete additional training at individual practice sites.

Prior to beginning introductory and advanced pharmacy practice experiences, each student needs to submit proof of being a U.S. citizen or non-citizen national, is a lawfully admitted immigrant for permanent residence, or is a temporary visitor lawfully admitted for educational study. In addition, students are required to complete an annual criminal background check and undergo a toxicology screen to identify drug use. Results of these screenings can only be accepted if conducted using program-approved vendors and are at the student's own expense. Many sites reserve the right to repeat background checks and drug screens prior to or during an experiential course.

In compliance with the U.S. Public Health Service requirements, it is recommended that pregnant students not enroll in Human Anatomy, Physical Assessment and Drug Administration, or other courses in which students may come into contact with tissue and/or pathogens, or engage in experiential courses where there are patients/clients with infectious diseases unless first receiving written permission from their physicians.

Doctor of Pharmacy Degree Requirements

Pharmacy Preprofessional Studies

Please see the preceding section titled "Preprofessional Phase Course of Study" for a detailed listing of requirements.

Pharmacy Professional Studies

3rd Year Professional Phase

All courses in the following table are required.

PHM	310	Pathophysiology/Immunology	3.00
PHM	311	Pharmaceutics I	2.00
PHM	312	Pharmaceutics II	2.00
PHM	313	Biochemistry	3.00
PHM	314	Pharmacy Profession and the Health Care System	3.00
PHM	315	Pharmacy and Society	2.00
PHM	320	Molecular Biology	2.00
PHM	321	Principles of Pharmacology/Medicinal Chemistry/Toxicology	2.50
PHM	322	Introduction to Pharmacy Law and the Integrated Pharmaceutical Care Lab	1.00
PHM	323	Pharmaceutics III	3.00
PHM	324	Biostatistics	2.00
PHM	325	Introduction to Pharmacy Practice	3.00
PHM	326	Principles of Physical Assessment and Medication Administration	2.00
PHM	300	P-3 Introductory Pharmacy Practice Experience	0.50

4th Year Professional Phase

All courses in the following table are required.

PHM	410	Human Genetics	2.00
PHM	411	Modular Organ Systems Therapeutics I	3.00
PHM	412	Modular Organ Systems Therapeutics II	3.00
PHM	413	Modular Organ Systems Therapeutics III	2.50
PHM	414	Drug Information and Literature Evaluation	3.00
PHM	415	Pharmacy Practice Laboratory	1.00
PHM	420	Principles of Health Behavior and Patient-provider Communication	3.00
PHM	421	Pharmaceutics IV	3.00
PHM	422	Compounding Laboratory I	1.00
PHM	423	Pharmacy Practice Laboratory I	1.00
PHM	424	Modular Organ Systems Therapeutics IV	2.50
PHM	425	Modular Organ Systems Therapeutics V	3.50
PHM	400	Community Practice Introductory Pharmacy Practice Experience	4.00

5th Year Professional Phase

All courses in the following table are required.

PHM 510	Health Care Informatics	2.00
PHM 511	Pharmaceutics V	3.00
PHM 512	Compounding Laboratory II	1.00
PHM 513	Pharmacy Practice Laboratory II	1.00
PHM 514	Practical Application of Biological Sciences	1.00
PHM 515	Pharmacoeconomics and Pharmacoepidemiology	2.00
PHM 516	Modular Organ Systems Therapeutics VI	2.50
PHM 517	Modular Organ Systems Therapeutics VII	2.50
PHM 521	Practice Management	2.00
PHM 522	Public Health & Patient Safety	3.00
PHM 523	Pharmacogenomics	2.00
PHM 524	Clinical Pharmacokinetics	2.00
PHM 525	Pharmacy Law and Ethics	3.00
PHM 528	Modular Organ Systems Therapeutics VIII	3.50
PHM 529	Modular Organ Systems Therapeutics IX	3.00
PHM 500	Institutional Practice Introductory Pharmacy Practice Experience	4.00

6th Year Professional Phase (Required Advanced Pharmacy Practice Experiences)

All courses in the following table are required.

PHM 610	Acute Care Advanced Pharmacy Practice Experience	5.00
PHM 611	Ambulatory Care Advanced Pharmacy Practice Experience	5.00
PHM 612	Community Practice Advanced Pharmacy Practice Experience	5.00
PHM 613	Institutional Practice Advanced Pharmacy Practice Experience	5.00
PHM 614	Inpatient General Medicine Advanced Pharmacy Practice Experience	5.00
PHM 615	Senior Seminar	2.50 x 2

Professional Electives

Three courses (9 credits) of professional didactic elective courses are required. These are typically taken during years P4 and P5.

Two courses (10 credits) of elective Advanced Pharmacy Practice Experiences are required.

Additional Requirement

Completion of the LIU Brooklyn computer literacy requirement.

Credit and GPA Requirements

Minimum Total Credits: 219*

Minimum Liberal Arts and Sciences Credits: 60

Minimum Major GPA: 2.00

Minimum Overall GPA: 2.00

*depending on admission status; see notes for courses FYS 1 and PHM 1 for the Doctor of Pharmacy Degree

Bachelor of Professional Studies (BPS) in Pharmaceutical Sciences

The Bachelor of Professional Studies (BPS) in Pharmaceutical Sciences offers students appropriate preparation for entry into careers and/or graduate study in areas such as pharmaceutical and cosmetic manufacturing, marketing, insurance, regulatory affairs and sales. It is intended as a program that has wide applicability in pharmaceutical-related fields that do not require licensure as a pharmacist.

The BPS in Pharmaceutical Sciences is not intended for students wishing to become pharmacists and does not lead to license eligibility in the pharmacy profession. Students interested in becoming pharmacists should consider the LIU Pharmacy Doctor of Pharmacy (PharmD) program. LIU Pharmacy PharmD students, however, are eligible to apply to be awarded the BPS in Pharmaceutical Sciences en route toward the PharmD degree.

Program Mission:

The mission of the Bachelor of Professional Studies (BPS) in Pharmaceutical Sciences at LIU Pharmacy is to prepare students for career opportunities in the physical, life and health sciences and related disciplines that require a bachelor's degree. The BPS degree in Pharmaceutical Sciences positions the graduate for entry into biomedical graduate programs and, more specifically, programs in the pharmaceutical sciences.

The program provides a well-rounded undergraduate education, overlapping with the first two years of the professional phase of the LIU Doctor of Pharmacy program. By the completion of the program students will be able to:

Goal 1. Develop and apply knowledge from the foundational and pharmaceutical sciences to explain drug formulation and action.

- LO1. Demonstrate knowledge of the basic biomedical sciences (e.g., physiology, pathophysiology, biochemistry, microbiology, immunology).
- LO2. Demonstrate knowledge of mechanisms of action of drugs to understand the clinical profile of pharmacological agents.
- LO3. Demonstrate and apply knowledge of pharmacokinetic and pharmacodynamic processes and principles to discuss therapeutic and adverse drug outcomes.
- LO4. Demonstrate the knowledge necessary for the preparation of pharmaceutical products.

Goal 2. Develop knowledge from the social/administrative/behavioral pharmacy sciences that is necessary to evaluate scientific

literature and advance population health and patient-centered care.

- LO1. Demonstrate knowledge of social, political, and economic factors that influence the delivery of health care in the United States.
- LO2. Demonstrate knowledge of the organization of various health care delivery systems and the role played by providers in various practice settings.
- LO3. Recognize the social determinants of health that contribute to disparities and inequities in access to health care.
- LO4. Demonstrate knowledge of study designs and statistical methods used in scientific research studies.
- LO5. Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information.

Goal 3. Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization.

- LO1. Demonstrate the ability to communicate health-related information and education using effective oral and written skills.

Goal 4. Exhibit professional behaviors and values.

- LO1. Display preparation, initiative, and accountability consistent with a commitment to excellence.
- LO2. Identify, create, implement, evaluate, and modify plans for personal and professional development for the purpose of individual growth.
- LO3. Demonstrate teamwork skills and the ability to collaborate with others.

Bachelor of Professional Studies (BPS) in Pharmaceutical Studies

[Program Code: 38335]

Liberal Arts and Science Courses (68 credits)

Science Course Requirements

BIO 1	General Biology	4.00
BIO 2	General Biology	4.00
BIO 101	Microbiology	4.00
BIO 137	Anatomy and Physiology I	4.00
BIO 138	Anatomy and Physiology II	4.00
CHM 3	General and Inorganic Chemistry	4.00
CHM 4	General and Inorganic Chemistry	4.00
CHM 121	Organic Chemistry	4.00
CHM 122	Organic Chemistry	4.00
PHY 27	Physics for Pharmacy	4.00

Mathematics Course Requirements

Both courses [7 credits] from the following table are required.

MTH 40	Calculus I	4.00
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MTH 100 **Statistics** 3.0
0

English Composition and Writing Course Requirements

6 credits required

ENG 16 English Composition 3.00

ENG 178 **Writing in the Sciences** 3.0
0

English Literature Course Requirements

One course [3 credits] from the following table are required.

ENG 61 European Literatures I 3.00

ENG 62 European Literatures II 3.00

ENG 63 American Literatures 3.00

ENG 64 Non-Western Literatures 3.00

Philosophy OR History Course Requirements

(Two courses [6 credits] are required. One Philosophy and one History)

Philosophy

PHI 60 Philosophical Explorations 3.00

History (choose 1)

HIS 1 History of Civilizations to 1500 3.00

HIS 2 History of Civilizations Since 1500 3.00

Economics Course Requirement

One course [3 credits] from the following table is required.

ECO 1 Introduction to Economics 3.00

ECO 2 Introduction to Economics 3.00

Psychology Course Requirement

PSY 3 General Psychology 3.00

Major Requirements (52 credits)

PHM 310 Pathophysiology/Immunology 3.00

PHM 311 Pharmaceutics I 2.00

PHM 312 Pharmaceutics II 2.00

PHM 313 Biochemistry 3.00

PHM 314 Pharmacy Profession and the Health Care System 3.00

PHM 315 Pharmacy and Society 2.00

PHM 320 Molecular Biology 2.00

PHM 321 Principles of Pharmacology/Medicinal Chemistry/Toxicology 2.50

PHM 323 Pharmaceutics III 3.00

PHM 324 Biostatistics 2.00

PHM 325 Introduction to Pharmacy Practice 3.00

PHM 326 Principles of Physical Assessment and Medication Administration 2.00

PHM 410 Human Genetics 2.00

PHM 411 Modular Organ Systems Therapeutics I 3.00

PHM 412 Modular Organ Systems Therapeutics II 3.00

PHM 413 Modular Organ Systems Therapeutics III 2.50

PHM 414 Drug Information and Literature Evaluation 3.00

PHM 420 Principles of Health Behavior and Patient-provider Communication 3.00

PHM 424 Modular Organ Systems Therapeutics IV 2.50

PHM 425 Modular Organ Systems Therapeutics V 3.50

Electives

Two courses (6 credits) of didactic elective courses are required.

Additional Requirement:

Completion of the LIU Brooklyn computer literacy requirement.

Credits and GPA Requirements

Minimum Total Credits: 127

Minimum Major GPA: 2.00

Minimum Overall GPA: 2.00

ACCELERATED SHARED CREDIT PROGRAMS

PharmD and MBA, Shared-Credit Program

LIU Pharmacy offers a Pharm.D./M.B.A in Business Administration shared credit program in conjunction with the School of Business, Public Administration and Information Sciences (SBPAIS). Students take courses that have been approved by both the College of Pharmacy and SBPAIS to meet the requirements of both the Pharm.D. and M.B.A. degrees. Students enrolled in this program will be well-positioned for broader career opportunities in the fields of pharmacy practice, pharmacy administration and management, health care administration, the pharmaceutical industry, research, advanced business studies or academia.

Students in the spring of their first professional year (P3) of the Pharm.D. program have the option of enrolling in a predetermined sequence of M.B.A. coursework which begins in the summer after the P3 year. Pharm.D. students must have a minimum professional GPA of 3.0 prior to enrolling in the shared credit program. If accepted into the shared credit program, students must meet the academic standards of both the College of Pharmacy and the SBPAIS (refer to the graduate bulletin for the academic standards of the M.B.A. program). To continue in the program they must maintain a minimum GPA of 3.0 in the masters' courses and a minimum GPA of 2.0 in pharmacy courses. Specific questions regarding which

courses contribute to the student's Pharm.D. GPA and M.B.A. GPA should be directed to respective academic departments.

Upon successful completion of all Pharm.D. and M.B.A. requirements, students will be awarded both degrees. It is expected that students enrolled in this shared credit program complete both degrees by the end of the final pharmacy professional year (P6). However, students are conferred their Pharm.D. and M.B.A. degrees upon the completion of the credits and the requirements of each.

Pharm.D. / M.B.A. in Business

Administration

240 Minimum Total Credits Required

Pharmacy Pre-professional Studies

Please see the pre-professional requirements as described for the Pharm.D. program.

Pharmacy Professional Pharm.D. and Business Administration M.B.A. Required Courses

3rd Year Professional Phase

All courses in the following table are required.

PHM 310 Pathophysiology/Immunology 3.00

PHM 311 Pharmaceutics I 2.00

PHM 312 Pharmaceutics II 2.00

PHM 313 Biochemistry 3.00

PHM 314 Pharmacy Profession and the Health Care System 3.00

PHM 315 Pharmacy and Society 2.00

PHM 320 Molecular Biology 2.00

PHM 321 Principles of Pharmacology/Medicinal Chemistry/Toxicology 2.50

PHM 322 Introduction to Pharmacy Law and the Integrated Pharmaceutical Care Lab 1.00

PHM 323 Pharmaceutics III 3.00

PHM 324 Biostatistics 2.00

PHM 325 Introduction to Pharmacy Practice 3.00

PHM 326 Principles of Physical Assessment and Medication Administration 2.00

PHM 300 P-3 Introductory Pharmacy Practice Experience 0.50

4th Year Professional Phase

All courses in the following table are required.

PHM 410 Human Genetics 2.00

PHM 411 Modular Organ Systems Therapeutics I 3.00

PHM 412 Modular Organ Systems Therapeutics II 3.00

PHM 413 Modular Organ Systems Therapeutics III 2.50

PHM 414 Drug Information and Literature Evaluation 3.00

PHM 415	Pharmacy Practice Laboratory	1.00
PHM 420	Principles of Health Behavior and Patient-provider Communication	3.00
PHM 421	Pharmaceutics IV	3.00
PHM 422	Compounding Laboratory	11.00
PHM 423	Pharmacy Practice Laboratory I	1.00
PHM 424	Modular Organ Systems Therapeutics IV	2.50
PHM 425	Modular Organ Systems Therapeutics V	3.50
PHM 400	Community Practice Introductory Pharmacy Practice Experience	4.00
GBA 510	Financial Accounting for Managers	3.00
GBA 511	Corporate Financial Management	3.00
GBA 513	Marketing Management	3.00
MBA 634	Service and Operations Management	1.50
MBA 635	Entrepreneurship	1.50
MBA 630	Marketing Strategy	1.50
MBA 633	Corporate Financial Policy	1.50

MBA 640	Making Effective Presentations	1.00
MBA 641	Managerial Communications	1.00
MBA 650	Business Intelligence	1.00
MBA 653	Marketing Analysis	1.50
MBA 655	Management of Innovation and Technology	1.50

6th Year Professional Phase (Required Advanced Pharmacy Practice Experiences)

All courses in the following table are required.

PHM 610	Acute Care Advanced Pharmacy Practice Experience	5.00
PHM 611	Ambulatory Care Advanced Pharmacy Practice Experience	5.00
PHM 612	Community Practice Advanced Pharmacy Practice Experience	5.00
PHM 613	Institutional Practice Advanced Pharmacy Practice Experience	5.00
PHM 614	Inpatient General Medicine Advanced Pharmacy Practice Experience	5.00
PHM 616 or 617	Elective Advanced Pharmacy Practice Experience	5.00
PHM 615	Senior Seminar	2.50 x 2
MBA 651	Marketing Analytics	1.50
MBA 652	Transformational Leadership	1.50
MBA 802	Business Policy for Pharmacists	5.00

Additional Requirement

Completion of the LIU Brooklyn computer literacy requirement.

Credit and GPA Requirements

Minimum Total Credits: 239*
 Minimum Liberal Arts and Sciences Credits: 60
 Minimum GPA PharmD Professional : 2.00
 Minimum GPA MBA: 3.00
 * depending on admission status; see notes for courses FYS 1 and PHM 1 for the Doctor of Pharmacy degree

PharmD and MPH Shared-Credit Program

Pharm.D. / M.P.H. Shared Credit Program

Minimum Total Credits Required- 239.
Credits and GPA Requirements
 69 credits pre-professional, 170 professional.
 Note: In order to be admitted and progress through the Pharm.D. / M.P.H shared credit program students must meet any and all specific academic requirements set by the college of pharmacy and the school of health professions.

LIU Pharmacy offers a Pharm.D./M.P.H shared credit program in conjunction with the School of Health Professions, Department of Public Health. Students take courses that have been approved by both the College of Pharmacy and School of Health Professions, Department of Public Health to meet the requirements of both the Pharm.D. and the M.P.H. degrees.

Students enrolled in this program will be well-positioned for broader career opportunities in pharmacy practice, public health practice, education, research, and governmental agencies. During the summer between the first and second Pharm.D. professional year (P3-P4) students will begin a predetermined sequence of M.P.H. coursework. Pharm.D. students must be in good academic standing and meet any specific admission requirements for the shared credit program prior to enrolling. In addition, prospective students must also meet any specific M.P.H. program admission requirements. If accepted, students must continue to meet any specific academic progression standards of both the College of Pharmacy and the School of Health Professions (refer to the graduate bulletin for the academic requirements and standards of the M.P.H program). Specific questions regarding which courses contribute to the student's Pharm.D. GPA and M.P.H. GPA should be directed to respective academic departments.

Upon successful completion of all Pharm.D. and M.P.H. requirements, students will be awarded both degrees. It is expected that students enrolled in this shared credit program complete both degrees by the end of the final pharmacy professional year (P6). However, students are conferred their Pharm.D. degree and M.P.H degree upon the completion of the credits and requirements of each.

Pharm.D. / M.P.H.

239 minimum credits required (69 pre-pharmacy, 170 professional)

Pharmacy Pre-professional Studies

Please see the pre-professional requirements as described for the Pharm.D. program.

Pharmacy Professional Pharm.D. and Masters in Public Health M.P.H. Required Courses (169 credits in the professional phase)

3rd Year Professional Phase

All courses in the following table are required.

PHM 310	Pathophysiology/Immunology	3.00
PHM 311	Pharmaceutics I	2.00
PHM 312	Pharmaceutics II	2.00
PHM 313	Biochemistry	3.00
PHM 314	Pharmacy Profession and the Health Care System	3.00
PHM 315	Pharmacy and Society	2.00
PHM 300	P-3 Introductory Pharmacy Practice Experience	0.50

		Fall Term credit total: 15.5	
PHM	320	Molecular Biology	2.00
PHM	321	Principles of Pharmacology / Medicinal Chemistry / Toxicology	2.50
PHM	322	Introduction to Pharmacy Law and the Integrated Pharmaceutical Care Laboratory	1.00
PHM	323	Pharmaceutics III	3.00
PHM	324	Biostatistics	2.00
PHM	325	Introduction to Pharmacy Practice	3.00
PHM	326	Principles of Physical Assessment and Medication Administration	2.00
		Spring Term credit total: 15.5	
PHM	400	Community Practice, Introductory Practice Experience	4.00
MPH	540	Elective	3.00
		Summer Term credit total: 7.0	

4th Year Professional Phase

All courses in the following table are required.

PHM	410	Human Genetics	2.00
PHM	411	Modular Organ Systems Therapeutics (MOST) I	3.00
PHM	412	MOST II	3.00
PHM	413	MOST III	2.50
PHM	414	Drug Information and Literature Evaluation	3.00
PHM	415	Pharmacy Practice Laboratory	1.00
MPH	610	Epidemiology	3.00
MPH	600	Foundations of Public Health and Health Services Management	3.00
		Fall Term credit total: 20.5	
		Winter Term credit total: 0.0	
PHM	420	Principles of Health Behavior and Patient Provider Communication	3.00
PHM	421	Pharmaceutics IV	3.00
PHM	422	Compounding Laboratory I	1.00
PHM	423	Pharmacy Practice Laboratory II	1.00
PHM	424	MOST IV	2.50
PHM	425	MOST V	3.50
MPH	735	Research and Evaluation Methods	3.00

MPH	625	Environmental Health Issues In Public Health	3.00
		Spring Term credit total: 20.0	
PHM	500	Institutional Practice Introductory Pharmacy Practice Experience	4.00
MPH	745	Organizing and Educating for Health	3.00
MPH	575	Elective	3.00
		Summer Term credit total: 10.0	

5th Year Professional Phase

All courses in the following table are required.

PHM	510	Health Care Informatics	2.00
PHM	511	Pharmaceutics V	3.00
PHM	512	Compounding Laboratory II	1.00
PHM	513	Pharmacy Practice Laboratory II	1.00
PHM	514	Practical Application of Biological Sciences	1.00
PHM	515	Pharmacoeconomics and Pharmacoepidemiology	2.00
PHM	516	Modular Organ Systems Therapeutics VI	2.50
PHM	517	Modular Organ Systems Therapeutics VII	2.50
PHM	525	Pharmacy Law and Ethics	3.00
MPH	750	Public Health Policy, Advocacy, and Leadership	3.00
		Fall Term credit total: 21.0	
		Winter Term credit total: 0.0	
PHM	521	Practice Management	2.00
PHM	522	Public Health and Patient Safety	3.00
PHM	523	Pharmacogenomics	2.00
PHM	524	Clinical Pharmacokinetics	2.00
PHM	528	MOST VIII	3.50
PHM	529	MOST IX	3.00
MPH	740	Program Planning, Implementation, and Evaluation	3.00
MPH	755	Health Communications Issues and Strategies	3.00
		Spring Term credit total: 21.5	

6th Year Professional Phase (Required Advanced Pharmacy Practice Experiences)

All courses in the following table are required.

PHM	610	Acute Care Advanced Pharmacy Practice Experience	5.00
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PHM	611	Ambulatory Care Advanced Pharmacy Practice Experience	5.00
PHM	612	Community Practice Advanced Pharmacy Practice Experience	5.00
PHM	613	Institutional Practice Advanced Pharmacy Practice Experience	5.00
PHM	614	Inpatient General Medicine Advanced Pharmacy Practice Experience	5.00
PHM	616 or 617	Elective Advanced Pharmacy Practice Experience	5.00
MPH	798	MPH Capstone	2.00
MPH	799	Public Health Practicum (in lieu of one APPE elective)	5.00
PHM	615	Senior Seminar P6 Summer through Spring credit total: 42.0	2 x 2.50

Additional Requirement

Completion of the LIU Brooklyn computer literacy requirement.

Credit and GPA Requirements

Minimum Total Credits: 238
 Minimum Liberal Arts and Sciences Credits: 60
 Minimum GPA PharmD Professional: 2.00
 Minimum GPA MPH: 3.00

PharmD and MS, Shared Credit Programs

Effective Spring 2020, students in the professional phase of the program (P3) can choose graduate-level courses for electives as part of a Pharm.D. – Master’s degree shared credit program. This cost-effective option allows our Pharm.D. students to earn a Master’s degree a year or more sooner than would be the case if the degrees were earned back-to-back. The Pharm.D. – Master’s graduate will be more versatile and thus more job-competitive with this extra credential, with a built-in second career path as an option. The Pharm.D. degree is received on schedule, after the P-4 year. The Master’s degree is either received at the same time (4-year plan) or a year later (5-year plan). The 4-year plan is more cost-effective but quite rigorous; the student is taking 21 credit hours for certain semesters, plus graduate-level electives at the same time as the APPE rotations. Only Pharm.D. students with a cumulative GPA of 3.0 or higher can access the 4-year plan. The 5-year plan allows for a normal course load and is recommended.

Master of Science Degrees coupled to the Pharm.D:

· Master of Science (M.S.) in Drug Regulatory

Affairs

- Master of Science (M.S.) in Pharmaceutics: Cosmetic Science
- Master of Science (M.S.) in Pharmaceutics: Industrial Pharmacy
- Master of Science (M.S.) in Pharmacology & Toxicology
- Master of Science (M.S.) in Artificial Intelligence

To decide if the shared credit Pharm.D. – Master’s degree option is right for you, please meet with your academic advisor. For more insight on which Master’s program to choose, please meet with the Associate Dean of Research and Graduate Programs. Details on the curricular plan for each option can be found at:
<https://liu.edu/Pharmacy/Programs>

Co-Curricular Requirements

The co-curriculum is designed to provide students with opportunities to participate in public service and improve access to health services, health information and care for a broad array of the culturally diverse population in the New York metropolitan area. In doing so, our students will be leading advocates, navigators and providers for the general public and will collaborate with other health professionals and members of the community to facilitate improved access to healthcare and address important health issues in the community.

The co-curricular requirements are unique to each professional year. Students are required to log in to an online platform (such as Presence) and complete an evaluation for each requirement. Additionally, students will complete an annual evaluation specific to the overall co-curricular experience.

AMSCOP Co-Curriculum Progression Policy:

In addition to completing curriculum requirements, students must also complete all co-curricular requirements. These are outlined in the following table.

Co-Curricular Requirements by Year

Year 3

- Active participation in at least one professional organization (membership + attend at least 50% of organization meetings)
- Participate in at least one elective activity
- Attend at least one Professional Development Program (PDP)

Year 4

- Participate in at least one activity that qualifies as Educational Outreach, Direct Patient Care Outreach, or Legislative Advocacy
- Participate in at least one elective activity
- Attend at least one Professional Development Program (PDP)

Year 5

- Participate in at least one activity that qualifies as Educational Outreach, Direct Patient Care Outreach, or Legislative Advocacy
- Participate in at least one elective activity
- Attend at least one Professional Development

Program (PDP)

Year 6

- Participate in at least one activity that qualifies as Educational Outreach, Direct Patient Care Outreach, or Legislative Advocacy
- Participate in at least one elective activity
- Attend at least two (0.2 CEU) ACPE-accredited live Continuing Education (CE) events

Additional Information:

- Deadline for completion each academic year: typically May 1st for P3-P5 students, April 1st for P6 students (subject to change)
- All evaluations, self-reflections, and artifact/document uploads must be completed in addition to completing the required activities.
- Any false documentation violates LIU Pharmacy Student Code of Conduct and will be subject to disciplinary action.
- Activities completed after the deadline will count toward the requirements of the next academic year, if applicable.
- Cases of failure to adequately complete the annual co-curricular requirements will be reviewed by the Co-Curriculum Committee and referred to the Office for Student and Academic Affairs for appropriate action, which is a hold on course registration and/or to be unenrolled from all registered courses for the next academic year. Upon timely completion of the missed requirement(s), the registration hold and/or course unenrollment may be removed.
- More information including a calendar of events can be found at the College’s Co-Curriculum Website:
<https://www.liu.edu/Pharmacy/Academic-Programs/PharmD/Co-Curriculum-Committee>

Professional Development Portfolio

The goals of the professional development portfolio and faculty mentoring process are to provide a platform for students to document their longitudinal progress towards the achievement of the program learning outcomes and to encourage and develop students’ critical thinking and self-awareness. In addition, the professional development portfolio will provide students with career guidance and assist with professional development.

To meet these goals, students are required to complete several assignments per professional year. In addition to setting/updating goals and maintaining a CV, students must self-rank their progress towards each of the learning outcomes. They are also required to upload evidence to support their ranking. A number of resource documents have been created to assist students with these assignments. In addition, students will meet with their assigned mentors to guide them through the professional development portfolio process.

AMSCOP Portfolio Compliance and

Progression Policy

- Portfolio requirements vary depending on the year of the professional program. Students will be informed of requirements at the start of each semester.
- Deadlines for completing all portfolio requirements are set by the Learning Outcomes Committee.
- All portfolio requirements, including but not limited to assessments, self-reflections, artifact/document uploads, must be completed by the specified deadlines.
- Any student submitting false documentation will be in violation of the LIU Pharmacy Student Code of Conduct and will be subject to disciplinary actions.

The Learning Outcomes Committee will review all cases of student failure to adequately complete the annual Professional Development Portfolio requirements. Such cases will be referred to the Office for Student and Academic Affairs for appropriate action, which entails placement of a hold on student course registration and/or unenrollment from courses for the next academic year. Upon timely completion of the missed requirement(s), the registration hold and/or course unenrollment may be removed.

Interprofessional Education

In 2010, World Health Organization (WHO) defined IPE as "Interprofessional education that occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes".

The goals of IPE are for students to learn how to function in an interprofessional (IP) team and carry learned knowledge, skills, and values into their future practice, to provide IP patient-centered care as part of a collaborative team, and to focus on improving patient outcomes.

An IP team is composed of members from different healthcare professions (including but not limited to pharmacists, physicians, nursing, nurse practitioners, dietitians, etc.) who have specialized knowledge, skills, abilities, and expertise.

An IP learning experience prepares health professions students to work together with a common goal of providing safer and better patient-centered care. The Accreditation Council for Pharmacy Education (ACPE) requires (as an accreditation standard for all colleges of pharmacy) that all PharmD students participate in IPE programs. ACPE specifically states that "all students to provide entry-level, patient-centered care in a variety of practice settings as a contributing member of an IP team. In the aggregate, team exposure includes prescribers as well as other healthcare professionals."

The LIU College of Pharmacy has instituted several initiatives to ensure that all pharmacy students engage in IPE activities so that each and every graduate is provided with the knowledge and

skills necessary to effectively collaborate with various healthcare professionals to provide optimum patient-centered care. A variety of IPE programs are offered to our PharmD students throughout the calendar year. These IPE activities range from small simulation exercises involving a few health profession students/healthcare practitioners to large-scale programs. Some examples of the IPE events at the LIU College of Pharmacy include:

- Small SIM Lab simulation activities focus on long-term conditions involving a few students/healthcare professionals.
- Large-scale virtual game-based IPE simulations. These simulations consist of groups comprised of students/healthcare professionals comprising as many as ten different and discrete health professions.

The student's time commitment for IPE is approximately two (2) to four (4) hours per year.

All students are asked to do preparatory assignments prior to the IPE activity to ready themselves to be active participants in the IPE event. Assignments include reviewing the latest guidelines, watching videos and reading articles relevant to the IPE event, complete pre- and post-event surveys, etc.

All scheduled IPE events are **mandatory** to attend. All students are also required to **actively participate**. Participation in IPE events is **required for graduation**. The only acceptable excuses for missing any IPE that you are assigned to, include: (1) personal illness that requires a visit to an emergency department or private physician's office, (2) death of an immediate family member, or (3) a natural disaster (when declared by a governmental body or the university) that prohibits travel. In the event that one of the above-mentioned excuses applies to an absence, the student must notify the IPE Office, as soon as possible, certainly before the IPE event is scheduled to commence. Appropriate written documentation must be provided to the IPE Office within 72-hours of the missed IPE event. An excused absence means that the student is eligible to make up the IPE event.

Cases of failure to adequately complete the annual IPE requirements will be reviewed by the Office of Interprofessional Education. Such cases will be referred to the Office of Student and Academic Affairs for appropriate action, which entails **placement of a hold on student course registration for and/or unenrollment from courses for the next academic year**. Upon timely completion of the missed requirement(s), the registration hold and/or the course unenrollment may be removed.

Pre-APPE Competencies

PRE-APPE COMPETENCIES

As part of the Accreditation Council for Pharmacy Education (ACPE) Standards, all colleges of pharmacy are required to provide

evidence that students have achieved certain "must-have" abilities prior to entering APPEs. These abilities are centered around eleven core domains and are outlined in Appendix A of ACPE's Guidance for Standards 2016. In order to achieve this expectation, LIU Pharmacy has created the "Pre-APPE Competency Assessment Plan." The plan calls for students to demonstrate competency in the eleven core domains through one or more specific assessment activities linked to a performance competency. The faculty selected the performance competencies and assessment activities after careful consideration of the curriculum. Some of the assessments are embedded within courses, but most will be held outside of specific courses during the P5 year. Specific details regarding the assessments and assessment days will be provided in advance.

Every student must demonstrate competency in each of the assessments prior to the start of APPEs. Students who do not successfully demonstrate competency on the first attempt may be provided with opportunities for remediation/additional attempt(s) during the designated assessment period. Students who fail to pass all competencies before the date when APPE preferences are due will not be issued an APPE schedule. Failure to pass all competencies by the last remediation date offered by the College will prevent students from starting APPEs.

PHARMACY CURRICULUM OUTCOMES ASSESSMENT (PCOA)

As of 2016, the Accreditation Council for Pharmacy Education (ACPE) requires all colleges of pharmacy to assess students nearing the completion of the didactic curriculum using the Pharmacy Curriculum Outcomes Assessment (PCOA). Results of this assessment are used to gauge whether the curriculum is adequately preparing students to apply the foundational sciences to the provision of patient-centered care. The PCOA is a standardized examination that is designed to assess students' knowledge of four main content areas (basic biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and the clinical sciences) and 28 subtopic areas. The exam is developed by the National Association of Boards of Pharmacy (NABP) and is administered in a computer-based format in a similar fashion to NAPLEX.

Participation in the PCOA is a **mandatory** requirement prior to entering APPEs. Those students who fail to take the PCOA and who do not present a valid excuse to the Office of Student and Professional Affairs must take the examination at the next scheduled administration; this may cause a delay from starting APPEs.

Students are required to register for the PCOA by a given deadline. Information will be shared by the College in advance of the deadline. Any student who fails to register by the deadline, or

who registers but does not attend the examination will be required to pay the administrative fee that is charged by NABP. Further information regarding the PCOA can be found at: <https://nabp.pharmacy/programs/pcoa/>

Students who do not meet the minimum competency may have to remediate areas of weakness.

PROFESSIONAL COURSE DESCRIPTIONS

PHM 300 P-3 Introductory Pharmacy Practice Experience

This course will expose students to the roles and responsibilities of pharmacists in a variety of settings where pharmacy is practiced through participation in on-campus seminars and off-campus visits. The student pharmacist will be expected to visit off-campus locations to observe the practice of pharmacy. Required visits will take place in Community Pharmacy, Hospital Pharmacy, and possibly other practice facilities. In addition to the site visits, the student will participate in programs and seminars geared to help develop an appreciation for the breadth of the profession and develop basic skills required to succeed in the pharmacy program and as future pharmacists. Students will also begin to explore the various professional organizations within the pharmacy profession.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 0.50

Every Fall

PHM 301 Introduction to Post-Doctoral Training.

The need for pharmacists in both direct patient care and research roles is growing. Postgraduate residency and fellowship training prepares pharmacy graduates for these roles. Professional organizations recognize this need and have called for all pharmacy graduates who enter careers with direct patient care responsibilities to complete residency training by the year 2020. The American Association of Colleges of Pharmacy also encourages completion of residency training, calling for colleges and schools of pharmacy to actively develop and enhance residency programs. While the interest and need for more residency and fellowship trained pharmacists exists, the corresponding growth rate of new programs and positions has not met the demand. As such, there is strong competition among applicants for available positions. Student training and education related to preparing and competing for these coveted positions is, therefore, timely. This course is intended to introduce the student pharmacist to post-doctoral opportunities, such as residency and fellowship training. Students will participate in an interactive dialogue with faculty, fellows, residents, and guest speakers to better understand the various career pathways open to pharmacists who are trained at the post-doctoral level. This course will also serve to guide the student on how to increase their likelihood of getting accepted into a post-doctoral training position. It is anticipated that students will select other elective coursework and APPEs to create a successful pathway to post-doctoral training opportunities.

Credits: 1

On Occasion

PHM 305 Personal & Professional Development I

This is the first in a series of six courses designed to promote students' personal development and professional growth as future pharmacists. Students will create, revise, and implement continuing professional development plans through various exercises and experiences. Each course will focus on various areas such as interprofessional education and students' readiness to begin the advanced pharmacy practice experiences (APPEs). Students will document growth over time through reflections, artifacts, and other evidence housed within an electronic portfolio. This course is largely self-directed with periodic on-campus seminars and meetings.

PHM 310 Pathophysiology/Immunology

This course covers the fundamental mechanisms, etiology, pathogenesis, and manifestations of common diseases seen in today's world. Students will become familiar with the predisposing factors and pathological processes that lead to disease at the molecular, cellular, organ, and whole body levels. Topics include an introduction to the immune system in health and disease, concepts of microbial pathogenesis and the responses of the host to infection; allergy and hypersensitivity; tissue graft rejection, clinical immunosuppression, the immune system vs. cancer, autoimmune diseases, and congenital and acquired immuno-deficiencies. Students are also exposed to the basic morphologic and functional changes of major disease processes in cardiovascular, respiratory, renal, digestive and endocrine, neurologic, and musculoskeletal systems. Throughout the course, students will be developing critical thinking, problem solving, and life-long learning skills needed in pharmacy practice. At the end of this course, students will be able to describe and explain the pathophysiological mechanisms of major human diseases, and apply this knowledge when learning about the pharmacotherapy of major disease states.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 3

Every Fall

PHM311 Pharmaceutics I: Pharmaceutical Calculations

This course is designed to enable students to perform calculations requisite for the study and practice of pharmacy. The course will also provide a basic understanding of statistics, necessary for the students' understanding of pharmaceutical and medical literature. After completing the course, students will be able to interpret prescription orders and perform all calculations necessary for the preparation of stock solutions and extemporaneous products. The course format will consist of lecture and recitation. The students will also be provided with problem sheets and text assignments that they

must work through on their own. It is believed that diligent and persistent practice is the best way to achieve proficiency and mastery in problem solving.

Co requisite: PHM 312; Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 2

Every Fall

PHM312 Pharmaceutics II: Basic Theories in Pharmaceutics

This course is designed to provide the students with the basic principles and application of physical chemistry in pharmacy. It provides the bases for understanding the chemical and physical phenomenon that govern the in vivo and in vitro actions of pharmaceutical products. This course serves as the foundation for the later study of pharmaceutical manufacturing, dispensing, and biopharmaceutics and pharmacokinetics.

Following completion of this course, students will be able to discuss the principles of physical chemistry such as solution theory, diffusion and dissolution, rheology, and kinetics as applied to pharmaceutical systems.

Co requisite: PHM 311; Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 2

Every Fall

PHM313 Biochemistry

This course provides the biochemical foundation necessary for students to understand the basis of pharmacotherapeutics. Topics include the structure and function of macromolecules, membrane structure and receptor signaling, biomolecular interactions, and the mechanisms of enzyme action. This is followed by the metabolism of carbohydrates, lipids, amino acids, nutrition, nucleotides, and the control of metabolic processes. Clinical correlations are provided throughout the course, and each student will be developing critical thinking, problem solving, and life-long learning skills needed in pharmacy practice due to the use of various active learning techniques.

After completing this course, the student will be able to apply the biochemical principles that are requisite to the understanding of immunology, medicinal chemistry, and pharmacotherapy.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 3

Every Fall

PHM314 Pharmacy Profession and Health Care System

Over the past few decades, pharmacy as a profession has evolved dramatically. This evolution of the pharmacist's role in healthcare has been in sync with several other changes in the health care system. This 3 credit course introduces the student to the dynamic and complex changes that have occurred in the U.S. health care system with an emphasis on the evolution of pharmacists' roles in the provision of health care products and services and pharmacy's

relationships with other healthcare providers in the health care system. It will detail the role of the other healthcare professionals and various healthcare settings in which pharmacists provide care currently and may be positioned to provide in the future.

Each class session will require students to think critically and communicate in small as well as large group settings to discuss the evolving nature of the pharmacist's role and the way in which future pharmacists can make a contribution to improving a patient's quality of life and safety.

Following completion of this course, students will be able to critically evaluate and discuss orally and in writing the historical development of the pharmacy profession and how it currently fits in the healthcare system and plays an important role in improving patient safety and patients' quality of life. Students will be able to advocate the professional contributions that pharmacists make in reducing healthcare costs, improving patients' quality of life and patient safety.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 3

Every Fall

PHM315 Pharmacy and Society

The role of pharmacists in today's society is becoming increasingly complex. While once pharmacists were seen as medication dispensers, pharmacists now play an influential role in providing healthcare services to improve patient outcomes and patient safety, healthcare policy and financial policies. Pharmacists are now among leaders who shape national and international landscape of healthcare services. Future pharmacists need to become abreast of issues related to healthcare services where their leadership and advocacy will be primarily needed.

Pre requisite: PHM 314; Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 2

Every Fall

PHM320 Molecular Biology

The biological sciences play a growing role in our understanding of disease and the manner in which they should be treated to ensure optimal outcomes for the patient. The goal of this course is to ensure that students have a broad understanding of the basic principles of gene expression, gene replication, and molecular interactions important to biological processes. Topics include mechanisms of DNA/RNA/protein synthesis and function, gene transcription and translation, gene expression and regulation, cell cycle regulation, and molecular biology of bacteria and viruses. Students are also introduced to genetic recombination, DNA biotechnology, and diagnostic molecular biology techniques utilized in the clinical laboratory. Throughout the course, students will be developing critical thinking, problem solving, and life-long learning skills needed in pharmacy practice.

Upon completion of this course, students will be able to explain the principles behind DNA, RNA, and proteins synthesis and regulation. Students also will be able to identify the patient care implications of their newfound knowledge. Student will be able to educate other health care professionals and patients about the importance of DNA sequencing and profiling in improving patient outcomes.

Pre-Requisite of PHM 313 is required

Credits: 2

Every Spring

PHM321 Principles of Pharmacology, Medicinal Chemistry and Toxicology

This course introduces students to many of the basic principles surrounding biological science disciplines such as pharmacology, medicinal chemistry, and toxicology. Students will, for example, begin to develop competencies in such areas as pharmacokinetics, pharmacodynamics, the theory of structure activity relationships, and toxicology. The overall course goal is to have the students develop an understanding of the scientific concepts needed to understand and ultimately provide rational drug therapy for individual patients.

Topics include basic pharmacokinetic parameters and concepts, drug metabolism and drug-drug interactions; dose-response relations; toxicity of chemical and pharmacological agents. Students are also introduced to the physiologic and pathophysiologic factors involved in drug absorption, distribution, metabolism and elimination, determinants of variability in drug responses, inter- and intra-patient variability in pharmacokinetics/ pharmacodynamics, and drug interactions. By the end of the course, students will be able to use basic pharmacokinetic parameters to begin to determine appropriate doses and dosages, and develop/assess dose-response curves to determine relative efficacies and potencies. Student will also be able to explain the rationale for the development of adverse events seen in patients based on an understanding of toxic metabolites and drug-drug interactions. Throughout the course, students will be developing critical thinking, problem solving, and life-long learning skills needed in pharmacy practice by the use of case studies, responses to questions posed by faculty members, and other active learning techniques.

Pre-requisites of PHM 310 and PHM 313 are required.

Credits: 2.50

Every Spring

PHM322 Introduction to Pharmacy Law and the Integrated Pharmaceutical Care Laboratory

This course is designed to prepare students for their introductory pharmacy practice experiences and provides students with an introduction to the principles of and skills required for contemporary pharmacy practice. Specifically, it reviews the various components of the prescription dispensing process, including the initial patient encounter, the

patient profile review, preparing and checking the dispensed medication, and counseling the patient. An emphasis will be placed on the laws and regulations that govern this process (e.g., elements required on the prescription and pharmacy label, electronic prescribing, controlled substance laws, patient counseling requirements). Small group teaching methods are employed to inform and prepare students for the simulated pharmacy practice scenarios to be held in the Integrated Pharmaceutical Care Laboratory. Laboratory sessions will allow students to develop a structured operational approach to the technical and legal aspects of pharmacy practice by accurately accepting, processing, and checking prescriptions to meet a patient's needs, gathering pertinent patient information, and providing information to a patient about prescription medications or products available over-the-counter. This course will prepare students to perform basic functions in community pharmacy practice.

A prerequisite of PHM 311 is required

Credits: 1

Every Spring

PHM323 Pharmaceutics III: Biopharmaceutics and Pharmacokinetics

This course provides the students with the basic principles and applications of pharmacokinetics. In order for a medication to be therapeutically successful, it must: enter the blood circulation through an absorption process, be distributed to the appropriate site of action, and finally be eliminated through a chemical (metabolism) or physical (excretion) process. Pharmacokinetics studies and quantifies mathematically these processes in order to optimize the actual use of medications (e.g.: selection of the most appropriate dose, formulation, frequency of administration etc.). Following completion of this course, students will be skillful with the principles of linear and non-linear pharmacokinetics, biological half-life, volume of distribution, and bioavailability. Students will be able to determine optimal dosage forms for specific situations and appropriate dosage regimens. The tools and principles acquired with this course are fundamental for the comprehension of pharmacotherapeutics and the practice of pharmaceutical care.

Prerequisites: PHM 311 and PHM 312

Credits: 3

Every Spring

PHM324 Biostatistics

This course is designed to introduce students to biostatistical concepts and methods commonly encountered by pharmacists. Biostatistics helps clinical researchers, clinicians and health policy makers to identify real treatment effects and associated contributions. A complete understanding of biostatistics is required to successfully evaluate scientific literature and draw conclusions for applicability to patient care scenarios. After completing the course students will be able to carry

out simple statistical tests, apply descriptive and inferential statistics in practice, select the appropriate statistical procedure to answer research questions, explain why they made that decision based upon statistical evidence and interpret clinical studies correctly. They will be familiar with statistical programs (such as Excel or Statistical Package for the Social Sciences- SPSS) to solve statistical problems and interpret statistical outputs. They will be able to explain what the results of the statistical tests mean and draw conclusions.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 2

Every Spring

PHM325 Introduction to Pharmacy Practice

This course is designed to introduce the student pharmacist to the pharmacists' patient care process, a model used to deliver patient-centered care in collaboration with other members of the health care team; care that is designed to optimize patient health and medication outcomes. The principles involved in this model, including data collection, assessment, planning, implementation, and monitoring of the patient, will be introduced. As a first step to achieving proficiency in the patient care process, students will learn how to effectively collect and analyze patient preferences and beliefs, subjective and objective information about the patient's health, use of medications and/or complementary and alternative therapies, and pertinent results of laboratory tests and diagnostic procedures. In addition, students will learn about principles of adverse drug reactions and drug interactions, therapeutic drug monitoring, and medication reconciliation, the understanding of which is integral to identifying medication-related problems and planning, implementing, and monitoring drug therapy. Since the patient care process is supported by the efficient use of information resources, drug information retrieval skills will be introduced. Underpinning this will be principles of documentation, and collaboration and communication with other health care providers and the patient. Through small group and active learning techniques students will have an opportunity to apply concepts covered during lecture.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 3

Every Spring

PHM326 Principles of Physical Assessment and Medication Administration

This course covers topics fundamental to patient care including the provision of collaborative drug therapy management, pharmacists as immunizers, and other expanded patient-care roles that pharmacists play in today's health care system. An emphasis is placed on the skills required to engage in medication therapy management services. These skills include the collection of objective data such as

is required during physical assessment for therapeutic monitoring, screening for drug induced diseases, the evaluation of adverse events, and the administration of pharmaceuticals and vaccines. Laboratory sessions provide students with an opportunity to work individually and in small groups to engage in simulated performances of physical assessment and medication administration. After completing the lecture and skills laboratory components of this course the student will be able to obtain medical histories, screen patients for common medical problems such as hypertension, diabetes and a variety of oncological disorders, detect adverse drug reactions and monitor a patient's therapies through a review of systems and physical examination. Students will also become familiar with administering intramuscular and subcutaneous injections and counseling patients on the correct technique for administration of ophthalmological and otic preparations, inhaler devices, and devices for nebulization.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 2

Every Spring

PHM400 Community Practice Introductory Pharmacy Practice Experience

This introductory practice experience course will expose the student to the patient care, administrative, distributive, and overall practice of a contemporary community pharmacy. The student pharmacist will engage in activities related to key elements involved with dispensing prescriptions such as interpreting a patient profile, taking an oral prescription, processing electronic prescriptions, performing applicable calculations, and preparing and dispensing products. Students will also assist with resolving insurance issues. Additionally, they will participate in available activities involving communication with various constituents including patients and caregivers, prescribers and their agents, and other healthcare professionals.

Prerequisites: PHM 300, 310, 311, 312, 313, 314, 315, 321, 322, 323, 324, 325 and 326

Credits: 4

Every Summer

PHM410 Human Genetics

Human Genetics is the study of inheritance and genetic variation in humans. It encompasses various fields including genomics, cytogenetics, molecular and quantitative genetics. The goal of this course is to ensure that students have a broad understanding of the basic principles of these fields and serve as a preparatory course for Pharmacogenomics, Personalized and Individualized Medicine. Topics include mechanisms of DNA/RNA/protein synthesis and function, gene transcription and translation, gene expression, meiosis, mutations, allele frequency, phenotypes and genotypes, and basis for common genetic disorders. Students are also introduced to methodologies used to study gene expression and profiling. Throughout the

course, students will be developing critical thinking, problem solving, and life-long learning skills needed in pharmacy practice. Upon completion of this course, students will be able to explain the principles behind inheritance, mutations, and proteins synthesis and regulation. Students also will be able to identify the patient care implications of their new-found knowledge. Student will be able to educate other health care professionals and patients about the importance of inheritance, polymorphisms and profiling in improving patient outcomes.

Pre requisites: PHM 313 and PHM 320

Credits: 2

Every Fall

PHM411 Modular Organ Systems Therapeutics Sequence (MOST I)

This is the first of the nine-course sequence that combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy to allow students to learn the mechanism of drug action, effects of medications in health and disease, and rational therapeutics for patients suffering from common disease states. Following brief introductory material, the series of courses follows an organ-system approach to disease states and their appropriate treatment. This course in the sequence includes discussion of common types of anemia, fluid and electrolyte abnormalities, renal failure, and acid base disorders.

Pre requisites: PHM 321, PHM 323 and PHM 325

Credits: 3

Every Fall

PHM412 Modular Organ Systems Therapeutics Sequence (MOST II)

This is the second of a nine-course sequence that combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy to allow students to learn the mechanism of drug action, effects of medications in health and disease, and rational therapeutics for patients suffering from common disease states. Following brief introductory material, the series of courses follows an organ-system approach to disease states and their appropriate treatment. The second course in the sequence includes discussion of hyperlipidemia, hypertension, cardiovascular conditions, cerebrovascular accident, and venous thromboembolism.

Pre requisites: PHM 321, PHM 323 and PHM 325

Credits: 3

Every Fall

PHM413 Modular Organ Systems Therapeutics Sequence (MOST III)

This is the third of a nine-course sequence that combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy to allow students to learn the mechanism of drug action, effects of medications in health and disease, and rational therapeutics for patients suffering from common disease states. Following brief

introductory material, the series of courses follows an organ-system approach to disease states and their appropriate treatment. The course in the sequence includes discussion of endocrine disorders (Diabetes Mellitus, Thyroid, Adrenal), Women's Health (Osteoporosis, Contraception, Menopause, Pregnancy and Lactation) and Obesity.

Pre requisites: PHM 321, PHM 323 and PHM 325
Credits: 2.50

Every Fall

PHM414 Drug Information and Literature Evaluation

This course is designed to introduce students to the concepts involved in responding to drug information requests including, analysis of the question, conducting a systematic search, and formulating and communicating a response. A significant portion of the course will focus on ways to evaluate the biomedical literature with respect to trial design, methodology, statistical analysis of results, and clinical relevance of findings. The course concludes with clinical applications of drug information skills that require students to judge the merit of various types of biomedical literature so as to arrive at an evidence-based pharmacotherapy decision. The critical thinking and problem solving skills of students will be developed as they are challenged with various active-learning strategies in lecture and recitation/small-group learning sessions that focus on the application of drug information and literature evaluation skills in the delivery of patient-focused care.

After completing this course students will be able to retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information and counseling to patients, their families or care givers, as well as other health care providers.

A prerequisite of PHM 324 and 325 is required
Credits: 3

Every Fall

PHM 415 Pharmacy Practice Laboratory I

This pharmacy practice laboratory is the first segment of a three-part laboratory series aimed at teaching, reinforcing, and assessing skills required to practice safely and effectively in a variety of pharmacy settings. Students will receive opportunities to practice, apply, and integrate information and skills acquired in previous and concurrent coursework in a simulated patient care environment.

Pre requisites: PHM 322, PHM 325, and PHM 326
Co requisites: PHM 411, PHM 412, and PHM 413
Credits: 1

Every Fall

PHM420 Principles of Health Behavior and Patient-provider Communication

To deliver pharmaceutical care effectively, pharmacists need to understand patient behaviors and communicate with patients and other members of the health care professionals through different modalities, e.g., verbal, written, graphic, and

electronic. In order to conform to OBRA '90 (federal regulation that has implications for pharmacists), and more recent regulations regarding pharmacy practice, requiring consultation with patients in a variety of specific situations, pharmacists must also possess the ability to address (both in writing and verbally) patients, community, senior, educational and religious groups who desire medication and health information, as well as share information, ideas and solutions with other pharmacists and health professionals. This course is designed to help students achieve competencies in the areas of understanding, influencing and modifying patient behaviors, effective verbal and written communication and engaging in professional behaviors that help improve patient quality of life and patient safety. This course is also the designated Writing Intensive (WI) course and involves students writing and presenting papers on topics related to effect of patient-provider communication on patient health outcomes. Recitation sessions provide the students with an opportunity to counsel patients while utilizing sound principles of communicating with patients in a variety of context. The recitation periods allow the students to enhance their communication and patient management skills by conducting one-on-one counseling sessions and get feedback from peers.

Following completion of this course, students will be able to effectively communicate (written and oral) and create patient care plans for improving compliance and healthy behaviors.

Credits: 3

Every Spring

PHM421 Pharmaceutics IV: Dosage Forms and Principles of Extemporaneous Compounding

An important component of drug therapy is the selection of the dosage form. Some of the factors considered in the selection process include patient factors, (e.g., age, weight, gender), the route of administration, design of the dosage form, socioeconomic factors, concurrent drug administration, and disease state. This course deals with the basic and applied scientific principles used in the design, preparation, storage, packaging, stability, incompatibilities, dispensing and use of polyphasic systems, including suspensions, and emulsions, of sterile parenteral, otic and nasal products and of total parenteral nutrition are necessary considerations of dosage form selection.

Pre requisites: PHM 311, PHM 312

Co requisite: PHM 422

Credits: 3

Every Spring

PHM422 Compounding Laboratory I

This is the first of a two-course sequence consisting of two to three hour laboratories of hands-on practice in compounding prescriptions of products not commercially available. Students will gain expertise in compounding extemporaneous dosage forms such as syrups, elixirs, emulsions,

suspensions, lotions ophthalmic and nasal solutions, intravenous preparations and TPN preparations. The course also introduces the students to the concepts of home infusion therapy and gives them an opportunity to practice preparing total parenteral nutrition admixtures. The objective of the course is to provide pharmacy students with a unique opportunity to become competent in preparing extemporaneous products and to practice their chosen time-honored profession. As compounding pharmacy continues to grow, it will provide additional pharmacists with the opportunity to use their innovative skills to solve patient problems. Laboratory hours will ensure that students properly interpret prescriptions, and employ actives and excipients that are appropriate for any given dosage form. The course will allow students to become cognizant of the quality of drugs, excipients and other additives in terms of their stability, compatibility and, when necessary, sterility. Students will be fully exposed and competent in the compounding techniques commensurate to the complexities of 21st century compounding.

Pre requisites: PHM 311, PHM 312

Co requisite: PHM 421

Credits: 1

Every Spring

PHM423 Pharmacy Practice Laboratory II

Pharmacy Practice Laboratory 1 is the first course of a two-part laboratory series aimed at teaching, reinforcing, and assessing skills required to practice safely and effectively in a variety of pharmacy settings. Students will receive opportunities to practice, apply, and integrate information and skills acquired in previous and concurrent coursework in a simulated patient care environment.

Pre requisites: PHM 322, PHM 414 and PHM 415

Co requisites: PHM 424 and PHM 425

Credits: 1

Every Spring

PHM424 Modular Organ Systems Therapeutics Sequence (MOST IV)

This is the fourth of a nine-course sequence combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy in order to provide the student with an integrated approach to understanding the molecular mechanisms of drug action, the effects of medications on the body, and rational therapeutic approaches to important disease states. An emphasis is placed on the most common conditions for which pharmacists and student pharmacists are exposed to when providing patient care. In general, the students learn pharmacologic principles first and then learn rational pharmacotherapeutics. Throughout the sequence, students will be developing their critical thinking and problem-solving skills so that they are well prepared for experiential education and, eventually, pharmacy practice. The course focuses on gastrointestinal disorders, cough/cold/allergy, asthma and chronic obstructive pulmonary disease,

and behavioral aspects of smoking cessation.

Pre requisites: PHM 321, PHM 325, PHM 411, PHM 412 and PHM 413

Credits: 2.50

Every Spring

PHM425 Modular Organ Systems Therapeutics Sequence (MOST V)

This is the fifth of a nine-course sequence that combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy to allow students to learn the mechanism of drug action, effects of medications in health and disease, and rational therapeutics for patients suffering from common disease states. Following brief introductory material, the series of courses follows an organ-system approach to disease states and their appropriate treatment. This course in the sequence includes discussion of common sleep disorders, seizures, common CNS disorders in elderly, smoking cessation, psychiatric disorders, headaches, migraines, alcohol and substance abuse disorders.

Pre requisites: PHM 321, PHM 325, PHM 411, PHM 412 and PHM 413

Credits: 3.50

Every Spring

PHM 430 Spanish Language and Culture for Pharmacists

The focus of this course is to combine didactic, active classroom discussion, team-based learning, creative exercises, and community-based learning to build Spanish cultural and language competencies in pharmacy practice. There is an imminent demand for Spanish-speaking and culturally competent health care providers as such need is outpacing population growth. The ability to relate, and communicate with Spanish-speaking patients are vital in developing pharmacy students into future pharmacists who can address and provide quality health care for an increasingly diverse patient population and to optimize patient outcomes. The purpose of this course is to prepare pharmacy students to learn, practice, and gain an appreciation of ethnic, cultural, and language dimensions when interacting with Latinx patients and developing drug therapy plans. A didactic portion of the course will cover vocabulary and language of major groups of pharmaceutical treatment products. Students are expected to perform assigned pre-readings and be prepared to discuss implications and perspectives on the readings in class. Projects will include creating a public health related poster and a team-based presentation of the most prevalent local Latinx ethnicities. In addition, students will complete weekly mini assignments of building a word bank of colloquial words and phrases, showcasing Latinx complementary alternative medicines and practices, and conducting and reflecting on one interview of a Latinx patient or health care provider. Students will be assessed on and build competency in counseling medications in Spanish as well as gain an appreciation of and apply the use of health-care

related Spanish language in the community

Credits: 3

On Occasion

PHM 470 Pharmaceutical Biotechnology

This course is designed to introduce students to the use of biotechnology and biotechnology-related techniques in the development of pharmacotherapeutic agents. Students will obtain expertise in the basic concepts of molecular biotechnology, the preparation of recombinant molecules (cytokines, insulin, and growth factors), RNA interference, antisense technology, monoclonal antibody-based pharmaceuticals. Students will also explore the placebo effect and cannabis therapy. After completing this course, students will be able to explain the procedures involved in the development of biotechnology-related pharmaceuticals and be familiar with the spectrum of pharmacotherapeutic agents that are produced using biotechnology and biotechnology-related techniques. This course will involve the use of video presentations, and digital experimental demonstrations to reinforce key concepts about the preparation and applications of biotechnology-derived products in the treatment of serious diseases. This is a blended course with approximately 50% of the content delivered in an online format.

The pre-requisite of PHM 313, PHM 321, PHM 320 is required.

Credits: 3

On Occasion

PHM 471 Advanced Renal Pharmacotherapy

The advanced renal pharmacotherapy course introduces students to advanced concepts and applications for management of renal diseases and tackles complex topics in renal pharmacotherapy. It will also explore many topics beyond those required in the curriculum as listed under the course outline below. This course is intended to build on the material from the "MOST"/Pharmacotherapeutics courses. Other than the pharmacotherapy management of renal diseases, the course will introduce landmark clinical trials and clinical guidelines to prepare students in practicing evidence-based medicine. Structure of the course will comprise of patient cases and patient profiles in order to facilitate understanding and promote complex decision-making. Workshops/case discussions will allow students to develop problem-solving skills in the areas of multifaceted renal topics.

Credits: 3

On Occasion

PHM 472 History of Pharmacy

The goal of the history of pharmacy course is to give students an introduction to the history of their profession and the origins of the medicines that have been and are being dispensed. The information presented will help provide students with a general chronology of the development of

the profession of pharmacy, its literature and the tools of the trade. In addition to understanding the historical foundations of pharmacy, which inform the present, and guide the future, students will learn that pharmacy is part of a bigger picture of the social, cultural, and economic environment. The course will provide a historical analysis covering over 6,000 years. Information will be presented in chronological order and follow the development of Western pharmacy and therapeutics. It will flow from prehistory to Egypt, Greece, Rome, and the Arab-Jewish periods to Europe. Much of the course time will focus on the American experience, 1600-2000. The education and training of neophyte pharmacists, discovery of new drugs and dosage forms, institutions including guilds, associations, and regulatory bodies, will be discussed and related to the present state of the profession. Development of medicines and pharmacy in the East will give students insight into how religion and various worldviews created different approaches to healing. Throughout the course, pharmacotherapy will be a key element of the history of pharmacy. From the 1630s, when quinine was proven to prevent and cure a disease to the over 100 effective medicines of the 20th century the impact of these medicines will be covered in some depth. In addition to lectures (including those given by notable guest lecturers), four hands-on labs will be devoted to preparing historical dosage forms and formulas that will help bring the history of pharmacy to life. Written prescriptions from 1880 to 1970 will be discussed as examples of how pharmacotherapy rapidly changed during the period. Students will also have the challenge of reading 19th and 20th century prescriptions.

Credits: 3

On Occasion

PHM 473 Introduction to the Pharmaceutical Industry: Insights and Opportunities for Pharmacists

This course is designed to provide pharmacy students with an overview of the pharmaceutical industry. In particular, the student will gain an understanding of the discovery, development and marketing of new pharmaceuticals, as well as an appreciation for the role that various company departments and functions play in providing support for pharmaceuticals products. A secondary goal is to raise the student's awareness of the role of the pharmacist in the pharmaceutical industry. A pre/co-requisite of PHM 4## level courses is required.

Credits: 3

On Occasion

PHM 475 Cardiovascular and Renal Pharmacotherapy: Case-Based Approach

The case-based cardiovascular (CV) and renal pharmacotherapy course allows students to apply concepts for the pharmacotherapy management of common CV and Renal diseases including application of important clinical practice guidelines

and major targeted trials. This course is intended for pharmacy students to practice and enhance advanced knowledge and clinical decision making skills, and prepare pharmacy students for post graduate training and clinical practice. It provides opportunity for students to practice with concepts that are seen in real-world clinical settings.

Structure of this course will comprise of patient cases and complex patient profiles in order to facilitate understanding and promote complex decision-making. Workshops/cases/patient profiles discussions will allow students to develop many skills in the areas of CV-renal topics.

Prerequisites: PHM 411 and 412

Credits: 3

On Occasion

PHM 476 Introduction to Regulatory Affairs of Medical Devices

This course is designed to introduce students to a general understanding of Medical Device Regulatory Affairs. It will prepare students to explore potential opportunities in the Medical Device Industry. The course includes an overview of the medical device industry, medical device products and device classifications. It explores industry-recognized standards, FDA guidances and reviews the content of FDA databases. Students will also gain an insight on the collaboration of product development and quality assurance teams to ensure safe and effective medical devices are developed. FDA submission and regulatory pathways/strategies for premarket notifications, pre-market approvals and labeling requirements will also be reviewed. Students will also be able understand the importance of meeting regulatory compliance through post market surveillance activities, addressing observational letters (483's), corrective and preventable actions (CAPA) and recall activities.

Prerequisites: PHM 313 and PHM 321

Credits: 3

On Occasion

PHM 477 Cannabis: Pharmacology, Therapy, and Controversy

This course will explore current research on the endocannabinoid system and its role in maintaining homeostasis. It will also focus on the many dosage forms of cannabis and the effects of these forms on health and wellness. These dosage forms will include the application of cannabinoid products approved for disease states and conditions such as Alzheimer's disease, multiple sclerosis, epilepsy, glaucoma, and chemotherapy-related nausea. Students will also explore the historical and political issues that resulted in the classification of cannabis as a Schedule I controlled substance. The classroom sessions will include interactive learning exercises and case studies.

Credits: 3

On Occasion

PHM 478 Introduction to Managed Care

Pharmacy Elective

The introduction to managed care pharmacy elective course provides an introduction to the concepts of pharmacy practice as it relates to managed care and the important role of pharmacists in P& T committees to assure quality and cost management within an organizational structure such as hospitals and pharmacy benefit managers. The course will cover broad managed care concepts including the history and evolution of the US healthcare system, European and Socialized Systems, and then focus on the roles of a pharmacist in a managed care environment and the process by which a typical P and T Committee determines drug selection for formularies. This includes such factors as clinical efficacy, cost, rebates, utilization, benefit plans and prescribing behaviors. Recognition of different managed care models including the VA system, hospitals, insurers, staff model and open access HMO's, ACOs, PBM's, and mail order companies. By course completion, the student will obtain knowledge of the dynamics and application of managed care.

Credits: 3

On Occasion

PHM 479 Advanced Topics in Gastroenterology and Nutrition Support

Pharmacy practice in nutrition support and gastroenterology impacts a diverse patient population, encompassing many different disease states and age groups. In this elective course, students will build upon their prior coursework and enhance their knowledge regarding pharmacologic and nutrition support management of patients with various gastroenterological disorders and nutrient deficiencies. Students will gain knowledge in the fundamentals of nutrition support pharmacy and gastroenterological pharmacotherapy and apply this information to real-world patient cases. Current guidelines, best practices, and clinical trials will be explored. This course is designed to provide students the chance to practice and enhance their clinical decision-making skills and will prepare students for clinical pharmacy practice and post-graduate training in these areas. Students will learn through interactive case activities and groupwork.

PHM 411 Prerequisite; PHM 421 and 424 Co-Requisites

Credits: 3

On Occasion

PHM500 Institutional Practice Introductory Pharmacy Practice Experience

This Introductory Pharmacy Practice Experience will provide the student with an opportunity to gain an understanding of what is involved in the provision of pharmacy services within an institutional setting. Utilizing the knowledge and skills obtained in the didactic and laboratory settings at the college, the student pharmacist will participate in distributive, administrative, and

clinical activities commonly performed by pharmacists who work in this setting. Specifically, the student will participate in the unit dose distribution system (using manual and/or a robotic system), prepare intravenous admixtures, respond to queries posed by health care professionals, utilize the patient profile and other computerized systems in the hospital/medical center to perform and document patient-care activities, and procedures unique to hospital practice. The student may have an opportunity to attend hospital or department meetings, and get involved in hospital projects such as nursing unit inspections and medication utilization reviews.

Prerequisites: PHM 300, 310, 311, 312, 313, 314, 315, 321, 322, 323, 324, 325 and 326

Credits: 4

Every Summer

PHM510 Health Care Informatics

Informatics is commonly defined as the use of computers to manage data and information. Medical informatics, also known as health informatics, is a more specific application of these tools and techniques toward endeavors related to the infrastructure, development and delivery of optimal healthcare. Pharmacy informatics is the nexus between improving the medication use process through informatics, and this topic has taken on unprecedented importance in today's contemporary pharmacy practice. Taken together, we come up with the term health care informatics. Thus it is important that pharmacy students possess and conceptualize within the framework of the medication use process the knowledge and skills of healthcare informatics.

This course will provide a primer on the use of automation systems (e.g., electronic health records, robotics) that support the medication use process. Students will gain an understanding of how biomedical data are acquired, stored and used, as well as the ethical considerations that accompany this process. An emphasis will be placed on the role of informatics in assisting clinicians in assuring, through decision support technologies, optimal medication use and quality.

Students will develop their critical thinking and problem solving skills as they engage in active learning exercises designed to prepare them for developing, evaluating, using, and maintaining health care information systems.

Credits: 2

Every Fall

PHM511 Pharmaceutics V: Dosage Forms and Principles of Extemporaneous Compounding

An important component of drug therapy is the selection of the dosage form. Some of the factors considered in the selection process include patient factors, (e.g., age, weight, gender), the route of administration, design of the dosage form, socioeconomic factors, concurrent drug administration, and disease state. This course deals with the basic and applied scientific principles used

in the design, preparation, storage, packaging, stability, incompatibilities, dispensing and use of solid and semi solid dosage forms, including dermal and transdermal product, powders and granules, capsules, tablets, suppositories, metered dose inhalers, dry powdered inhalers, nebulizers, rate-controlled and targeted drug delivery systems.

Pre requisites: PHM 311, 312 & 421

Credits: 3

Every Fall

PHM512 Compounding Laboratory II

This is the second of a two-course sequence consisting of two to three hour laboratories of hands-on practice in compounding prescriptions of products not commercially available. Students will gain expertise in compounding extemporaneous dosage forms such as syrups, elixirs, emulsions, suspensions, lotions ophthalmic and nasal solutions, intravenous preparations and TPN preparations. The course also introduces the students to the concepts of home infusion therapy and gives them an opportunity to practice preparing total parenteral nutrition admixtures. The objective of the course is to provide pharmacy students with a unique opportunity to become competent in preparing extemporaneous products and to practice their chosen time-honored profession. As compounding pharmacy continues to grow, it will provide additional pharmacists with the opportunity to use their innovative skills to solve patient problems. Laboratory hours will ensure that students properly interpret prescriptions, and employ actives and excipients that are appropriate for any given dosage form. The course will allow students to become cognizant of the quality of drugs, excipients and other additives in terms of their stability, compatibility and, when necessary, sterility. Students will be fully exposed and competent in the compounding techniques commensurate to the complexities of 21st century compounding.

Pre requisite: PHM 422

Co Requisite: PHM 511

Credits: 1

Every Fall

PHM 513 Pharmacy Practice Laboratory III

Pharmacy Practice Laboratory 2 is the final segment of a two-part laboratory series aimed at teaching, reinforcing, and assessing skills required to practice safely and effectively in a variety of pharmacy settings. Students will receive opportunities to practice, apply, and integrate information and skills acquired in previous and concurrent coursework in a simulated patient care environment.

Pre requisite: PHM 423

Co requisites: PHM 516 and PHM 517

Credits: 1

Every Fall

PHM514 Practical Applications of the Biological Sciences

The biological sciences recitation combines the

disciplines of pathophysiology, biochemistry, molecular biology, genetics, and the principles of medicinal chemistry/pharmacology/toxicology to provide students with an integrated approach to understanding the physiological, biochemical, and molecular mechanisms of disease and inheritance, as well as the therapeutic and toxic effects of medications on the human body. By working in teams and individually, students will utilize a variety of active learning strategies such as evaluating case studies, developing concept maps, and debating a variety of issues to solve complex problems, hone their skills and enhance their critical thinking, problem solving, and life-long learning skills.

Following completion of these recitations, students will be able to apply knowledge acquired in the basic sciences to direct patient care.

Pre requisites: PHM 310, PHM 313, PHM 320, PHM 321 & PHM 410

Credits: 1

Every Fall

PHM515 Pharmacoeconomics and Pharmacoepidemiology

In the past decade, pharmacists have come to be known as the medication experts of the health care system. Pharmacoepidemiology and pharmacoeconomics are research fields that address the effects of medication use in populations.

Naturally, it is expected that pharmacists have the requisite knowledge of the principles of pharmacoepidemiology and pharmacoeconomics. This course is designed to teach students about the different study designs and ratios used in different pharmacoepidemiology studies, confounders and biases affecting these studies and their results and how to conduct high-quality epidemiologic research that directly addresses both methodological and substantive questions. Students will also gain an understanding and expertise in utilizing various pharmacoeconomic formulas and ratios to make decisions about which drugs to be included in the formulary. Active learning strategies will be utilized. Following completion of this course, students will be able to critically evaluate

pharmacoepidemiological and pharmacoeconomic studies and make decisions about adapting the results of these studies in their practice. Students will be able to calculate ratios utilized in pharmacoepidemiological and pharmacoeconomic studies and provide recommendations related to medication use in populations.

A prerequisite of PHM 324 and 325 is required

Credits: 2

Every Fall

PHM516 Modular Organ Systems Therapeutics Sequence (MOST VI)

This is the sixth of a 9-course sequence combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy in order to provide the student with an integrated approach to understanding the molecular mechanisms of drug action, the effects of medications on the body, and

rational therapeutic approaches to important disease states. An emphasis is placed on the most common conditions for which pharmacists and student pharmacists are exposed to when providing patient care. In general, the students learn pharmacologic principles first and then learn rational pharmacotherapeutics. Throughout the sequence, students will be developing their critical thinking and problem-solving skills so that they are well prepared for experiential education and, eventually, pharmacy practice. This course focuses on infectious diseases.

Pre requisites: PHM 321, PHM 325, PHM 424 and PHM 425

Credits: 2.50

Every Fall

PHM 517 Modular Organ Systems Therapeutics Sequence (MOST VII)

This is the seventh of a nine-course sequence combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy in order to provide the student with an integrated approach to understanding the molecular mechanisms of drug action, the effects of medications on the body, and rational therapeutic approaches to important disease states. An emphasis is placed on the most common conditions for which pharmacists and student pharmacists are exposed to when providing patient care. In general, the students learn pharmacologic principles first and then learn rational pharmacotherapeutics. Throughout the sequence, students will be developing their critical thinking and problem-solving skills so that they are well prepared for experiential education and, eventually, pharmacy practice. The course focuses on the following topics in infectious diseases: HIV, viral hepatitis, fungal and opportunistic infections, sexually transmitted diseases (STDs), tuberculosis, infections to immunocompromised patients, and sepsis.

Pre requisites: PHM 321, PHM 325, PHM 424, and PHM 425

Credits: 2.50

Every Fall

PHM 518 Introduction to Research

This course will provide a basic and broad overview of different areas of research ranging from basic sciences, pharmaceuticals, clinical practice, and social administrative sciences. Students will learn about the different types of research done at LIU, learn the basics of experimental design, and propose an original research project. The course integrates didactic lecture material, laboratory observations, and in-class assignments over the semester.

Students will work in small groups to develop an original research proposal. The student teams will present the proposal to their peers and faculty. This course is intended to prepare students for potential continuation of the research experience and to increase student awareness of research opportunities at LIU.

Credits: 3

On Occasion

PHM 519 Addiction and Substance Use Disorders

This course is designed to provide students with an overview of the principles of addiction medicine and Substance Use Disorders (SUDs). At the end of this course, students will be able to describe non-pharmacological and pharmacological treatments for various SUDs. While the emphasis of the course will be on opioid use disorders, the course will discuss amphetamine, alcohol, cocaine, and nicotine use disorders. Students will understand the societal impact of SUDs and describe the various roles pharmacist plays in SUDs.

Credits: 3

On Occasion

PHM521 Practice Management

The healthcare system in the United States is changing rapidly. Pharmacists and their role in the healthcare system are at the epicenter of this change. Thus, it is imperative that future pharmacists learn how to handle the change in this rapidly evolving healthcare system. This course will help students acquire knowledge and skills required to excel in the areas of entrepreneurship, resource management, and business operations pertaining to pharmacy practice. Principles from the managerial sciences such as business management, human resource management etc., will be applied to pharmacy business operations and patient care services. By the end of the course, students should be able to analyze and evaluate plans for financially sound patient care services, identify and solve problems involving staffing requirements, apply human resource management tools to resolve issues, and evaluate the financial viability of a pharmacy business. The recitation will complement the lectures with hands on management science activities.

Credits: 2

Every Spring

PHM522 Public Health and Patient Safety

Increasingly, members of the health professions, health policymakers and the American public appreciate the importance of disease prevention and improvement of population health. The release of the document, Healthy People 2020 and national events such as the September 11 attack and the hurricane Katrina disaster have brought to public attention the need for a network of different health care professionals who can effectively respond to public health threats and improve population health. Pharmacists are one of the most accessible health care professionals to the public and, therefore, can significantly affect population health. Therefore, in addition to their conventional role of delivering optimal pharmacotherapy to individual patients, it is important for pharmacists to develop skills to become effective public health providers and improve population health.

The role of the pharmacist in public health is to be

able to assess the health needs of populations and to promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations and other members of an interprofessional team of health care providers. At the completion of this course, students will be able to design and evaluate initiatives to promote public health such as: (1) improve access to health care and reduce health disparities, (2) increase the quality of community based programs, (3) use communication strategies to improve health, (4) ensure the safe and effective use of medical products, (5) promote health and reduce chronic disease associated with diet and weight, (6) improve health, fitness and quality of life through promoting daily physical activity, (7) reduce substance abuse, and (8) reduce illness, disability and death related to tobacco use and exposure to secondhand smoke. Additionally, students will be trained in improving patient safety using a systems perspective. Students will be introduced to error reporting systems and techniques to identify, categorize and reduce medication errors.

The course includes lectures as well as recitation sessions. During the recitation, students will work on designing, implementing and evaluating a community based public health program.

Credits: 3

Every Semester

PHM523 Pharmacogenomics

This course exposes students to the genetic basis of diseases as related to mechanisms of action/toxicities, and inter-individual differences in response to medications and drugs. The focus is on personalized medicine and is based on molecular markers of diseases, medication effectiveness, and adverse events. An emphasis is placed on the most important genetic and genomic technologies involved in genotyping drug metabolizing enzymes, transporters, and other targets. Students are given opportunities to review and discuss current case studies of pharmacogenomics and individual variations in response to medications and drugs. The course ends with a discussion of ethical issues involving genetic testing, patient stratification and clinical trials, and the role of the FDA in pharmacogenomics and personalized medicine. The course consists of lectures and student-led case discussions. Throughout the course, students will be developing critical thinking, problem solving, and life-long learning skills needed in pharmacy practice.

Upon completion of this course, students will be able to describe the major genetic determinants involved in human diseases and their relation to variations in response to medications/drugs. Students also will be able to apply the concept of genetically determined populations to most aspects of pharmacotherapeutics, and will have the knowledge to educate other health care professionals and patients about the availability and

importance of genetic testing in order to provide personalized patient care.

Pre requisites: PHM 313, PHM 320, PHM 410

Co requisite: PHM 528

Credits: 2

Every Spring

PHM524 Clinical Pharmacokinetics

Clinical pharmacokinetics is the process of using drug concentrations, pharmacokinetic principles, and pharmacodynamics criteria to personalize drug therapy. Class time includes traditional lectures coupled with active learning exercises (e.g. case studies).

Following the completion of this course, students will be able to describe the way in which the pharmacokinetics of certain medications may be altered in specific patient populations (e.g., geriatrics, patients with renal or hepatic impairment). Students will also be able to describe the pharmacokinetics of specific medications (e.g., antiepileptics) their usual therapeutic concentration range, the relationships between concentration and pharmacodynamics effects, and factors affecting these relationships. Using knowledge regarding the pharmacokinetic characteristics of each medication, students will be able to individualize therapy for a given patient.

Pre requisites: PHM 323, PHM 412, PHM 425, PHM 516

Co Requisite: PHM 528

Credits: 2

Every Spring

PHM525 Pharmacy Law and Ethics

Like all professionals, pharmacists can be held legally accountable for the consequences of their personal conduct while providing care to their patients. This course is designed to provide students with an insight into the legal aspects of their practice. Students will be introduced to federal and state laws, statutes and professional ethics chartered by pharmacy professional associations. The course will cover both federal and state laws that impact and regulate the practice of pharmacy. Topics including the federal regulation of medications, regulation of controlled substances, and federal and state regulation of pharmacy practice will be discussed using case studies.

Detailed evaluation of the New York State laws and the relevant federal regulations pertaining to pharmacy may help the students in preparing for their Multistate Pharmacy Jurisprudence Exam (MPJE), and in understanding the diverse legal issues impacting future professional practice. Using an active learning strategy, students will be asked to critically think and provide rational and moral arguments on issues that pose legal, ethical and moral challenges.

Following completion of this course, students will be able to distinguish between moral, ethical and legal behaviors, construct arguments on issues pertaining to legal and ethical conduct in pharmacy practice, and demonstrate a working knowledge of

laws under which pharmacists and pharmacies operate.

Credits: 3
Every Fall

PHM 526 Introduction to Critical Care: A Case Study Approach

Students will be introduced to the concepts and approaches in the care of critically ill adult patients. This course will explore selected topics commonly encountered in critical care settings with a focus on diagnostic tests, treatment choices, monitoring parameters, and therapeutic outcomes. This course will use a combination of classroom-based presentations and case-based small group activities. Students will exercise judgment in the care of patients, apply knowledge learned in the classroom, and develop teamwork skills. Students will also gain an in-depth understanding of the pharmacists' role in the treatment of critically ill patients.

Prerequisites: PHM 411, PHM 412, PHM 413, PHM 424, and PHM 425

Credits: 3
Every Fall

PHM 527 From Petri Dish to Pharmacy: Where Do Medications Come From?

Students will explore the process of drug development through a case study of one or more individual drugs. This iteration of the course will focus on the story of Spinraza (nusinersen), a drug to treat Spinal Muscular Atrophy that was approved by the FDA in December 2016. Spinraza was the product of basic research done in Adrian Krainer's lab at Cold Spring Harbor Laboratory, where Dr. Novatt was a postdoc. Students will be able to trace the path of this new drug from when clinicians first identified the disease-causing mutation in patients to the initial biochemistry experiments to try to fix the problem in vitro, to developing the drug in mouse models, to the clinical trials and the application to the FDA. This is a rare opportunity for students to follow a drug from its very beginning through FDA approval, using a combination of published literature and personal observations.

Pre-Requisite of PHM 320 is required

Credits: 3
Every Fall and Spring

PHM 528 Modular Organ Systems Therapeutics Sequence (MOST VIII)

This is the eighth of a nine-course sequence combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy in order to provide the student with an integrated approach to understanding the molecular mechanisms of drug action, the effects of medications on the body, and rational therapeutic approaches to important disease states. An emphasis is placed on the most common conditions for which pharmacists and student pharmacists are exposed to when providing patient care. In general, the students learn pharmacologic principles first and then learn

rational pharmacotherapeutics. Throughout the sequence, students will be developing their critical thinking and problem-solving skills so that they are well prepared for experiential education and, eventually, pharmacy practice. This course focuses on autoimmune disease, pain management, rheumatological disorders, oncology, and organ transplantation.

Pre requisites: PHM 321, PHM 325, PHM 516 and PHM517

Credits: 3.50
Every Spring

PHM529 Modular Organ Systems Therapeutics Sequence (MOST IX)

This is the last of a nine-course sequence; combines the disciplines of pharmacology, medicinal chemistry, and pharmacotherapy in order to provide the student with an integrated approach to understanding the molecular mechanisms of drug action, the effects of medications on the body, and rational therapeutic approaches to important disease states. An emphasis is placed on the most common conditions for which pharmacists and student pharmacists are exposed to when providing patient care. In general, the students learn pharmacologic principles first and then learn rational pharmacotherapeutics. Throughout the sequence, students will be developing their critical thinking and problem-solving skills so that they are well prepared for experiential education and, eventually, pharmacy practice. The final course in the MOST series, a potpourri of topics are covered such as glaucoma, an introduction to geriatrics, introduction to pediatrics, veterinary medicine, enteral and parenteral nutrition, and managing the patient with hypovolemic and septic shock.

Pre requisites: PHM 321, PHM 325, PHM 516 and PHM517

Credits: 3
Every Spring

PHM 530 Evidenced Based Approach to Cardiovascular Pharmacotherapy

The evidence-based approach to cardiovascular (CV) pharmacotherapy course builds on students' knowledge of CV diseases and CV pharmacotherapy. It will also explore many topics beyond those required in the curriculum (e.g. pulmonary hypertension, hypertensive crisis). In addition to the pharmacotherapy management of CV diseases, the course will introduce landmark clinical trials and clinical guidelines to prepare students to practice evidence-based medicine. Structure of the course will comprise of patient cases and patient profiles in order to facilitate understanding and promote complex decision-making. Workshops/case discussions will allow students to develop problem-solving skills in the areas of multifaceted CV topics.

Prerequisites: PHM 411 and 412

Credits: 3
On Occasion

PHM 531 Introduction to Global Health for Health Professions

The Global Health Elective Course is a discussion-based course which prepares students to be global citizens and to meet the challenges of delivering effective health care worldwide. A global citizen is defined as "someone who identifies with being part of an emerging world community and whose actions contribute to building this community's values and practices." This course will explore the forces and interventions which have helped to shape the current health of the world, as well as the dynamic between health professionals when working together to address global health issues. A wide variety of multimedia will be utilized, including readings, videos, and podcasts, to foster dialogue. Students are expected to arrive to class prepared to actively participate and will take turns moderating in-class discussions. Practical experiences, projects, and presentations will also be employed to ensure students have the skills necessary to evaluate and design team-based health interventions for a specific patient population in a limited-resource setting.

Credits: 3
On Occasion

PHM 532 Hospital Pharmacy Administration

This course is designed to help students become familiar with the various operations and administrative components of hospital pharmacy. Students will learn about topics such as legal and regulatory requirements necessary to ensure safe and efficient medication use systems, outcomes, and improving the patient experience.

Credits: 3
Every Spring

PHM 533 Contemporary Compounding

This is a three-credit course consisting of two lecture hours and three laboratory hours per week. This course is designed to train pharmacy students in the field of compounding of extemporaneous dosage forms such as capsules, suppositories suspensions, ophthalmic solutions, lip balms, nasal sprays, troches, suppositories, ointments, and creams. It also provides an introduction to the concepts of home IV infusion therapy and gives them an opportunity to practice in preparing parenteral and enteral products. The course provides students with a unique opportunity to practice their chosen time-honored profession extemporaneous compounding for products that are not commercially available for patients with special needs.

As the role for compounding pharmacy continues to grow it will help provide additional pharmacists to the work force unique and innovative skill sets. In this course students will be trained to make ready upon request specialized extemporaneous formulations in case of a national emergency emanating from acts of biological, chemical or nuclear

terrorism. Students will be familiarized with guidance for facility and equipment requirements, and raw material sources and requirements, GMPs, GLPs, necessary record-keeping, calculating stability and beyond use dating.

A pre requisite of PHM 422 is required.

Credits: 3

Every Fall

PHM 534 Prescription Accessories

This course will discuss the importance of the prescription accessory department as a part of the ambulatory pharmacist’s practice. Prescription accessories will be categorized with respect to the pharmacist’s participation as a member of the healthcare team. Topics to be covered include legal requirements as dictated by CMS and the issues related to third party reimbursement policies for prescription accessories. Students will be instructed how to counsel patients regarding in the proper usage of thermometers, home pregnancy tests, fertility monitors, pregnancy preventatives, enemas, feminine syringe, pessaries, rectal and vaginal dilators, diabetic monitors and accessories male impotency pumps, SIDS monitors, enuretic devices, vaporizers, humidifiers, nebulizers, atomizers, wound care, tissue trauma, bandages and surgical dressings, catheters, ostomy supplies and devices, durable medical equipment, and types of orthotics and fitting procedures.

Course open to students with 3rd Year Standing in Pharm.D. Program

Credits: 3

Every Fall and Spring

PHM 535 Psychiatric Disorders

This elective course will offer insight into the most commonly diagnosed mental health disorders as well as the various personality disorders. The course will improve a pharmacy student’s understanding and knowledge of the various mental disorders, as well as the pharmacotherapeutic and behavioral interventions utilized in managing these disorders. Students will be able to develop a broad understanding of the social and cultural differences that exist in our communities, and their relationship to individuals with mental illness. Likewise, students will have the opportunity to interact with both diverse individuals and communities and contribute to improved community mental health by advocating for vulnerable groups. Students will be exposed to authentic case scenarios that emulate the clinical experience which will facilitate their learning and encourage active participation in their decision-making process. Likewise, students will be given the opportunity to put into practice concepts learned in class by interacting with people in real-world clinical settings. There will be opportunities to consolidate learning with a number of relevant practical activities throughout the course.

A pre requisite of PHM 425 is required.

Credits: 3

Every Spring

PHM 536 Complementary and Alternative Medicine

More than 50% of the world’s population uses complementary and alternative medicine (CAM), mostly in combination with conventional medication. There is growing evidence outlining the benefits as well as the possible adverse and side effects of CAM.1 As primary care providers, pharmacists are both accessible to patients and one of the most trusted healthcare professionals. As such they are at the forefront, providing information and guidance to patients about safe and effective use of all medicines. The goal of the alternative medicine elective course is to give students an introduction to different cultures approach to healing and therapy; expose students to alternative therapies in use in the United States, and to give students the ability to discern the validity of some alternative therapies as well as a level of comfort and respect for complementary therapy that is more frequently being used in Western Medicine.

Credits: 3

On Occasion

PHM 537 The Pharmacist and Correctional Health Care

This course is designed educate students to respond to current health issues within the correctional system. Through readings, reflective writing, and class discussions, students will learn about the role of the pharmacist in correctional health facilities and the complexities of health for people in prison and will gain understanding and skills in order to apply inter-disciplinary approaches to prison health.

Credits: 3

On Occasion

PHM 538 Self-Care in Community Practice

This elective course is aimed for students to acquire the knowledge, skills, and attitudes for practice in the community setting and other outpatient settings. Throughout this course, students will learn about non-prescription medications, herbal supplements, and other self-care remedies available to treat numerous medical conditions. For each condition discussed, students will learn treatment modalities and when to refer care to another healthcare provider. For each medication discussed, students will learn the basic mechanism of action, uses, potential adverse effects, common drug interactions, and any relevant contraindications. In addition, students will practice gathering relevant information, counseling patients on self-care while reinforcing communication techniques useful for conversing with patients of various cultural and socio-economic backgrounds.

Pre requisites: PHM 325, PHM 326, PHN 414 & PHM 420

Credits: 3

On Occasion

PHM 539 Advanced Topics in Infectious Diseases

This course provides students an opportunity to

expand their knowledge in the area of infectious diseases including human immunodeficiency virus (HIV) infection, tropical diseases, travel medicine, etc. Students will build upon their current pharmacotherapeutic knowledge through in-depth reading, discussions, journal club, and patient case presentation.

Pre requisites: PHM 516 and PHM 517

Credits: 3

On Occasion

PHM 599 Independent Study / Special Project

This elective provides students with an opportunity to pursue specific areas of interest in pharmacy, while collaborating with a faculty mentor on a special project that is research-based in nature. It is an opportunity for students to develop critical thinking and problem-solving skills. This includes developing a study hypothesis, designing the study methodology, researching the subject matter, collecting and analyzing data, and lastly presenting the research findings. Through working with a faculty member in his/her area of interest, students are also able to explore, in greater depth, the knowledge base in that particular area of pharmacy.

How to Apply?

Students may apply to take the special projects elective during the P4 or P5 Year. Any student in good academic standing interested in taking this course must submit the following to the Assistant Dean for Academic and Student Affairs:

1. A research proposal for a project mutually agreed upon by the student and the faculty member.
2. A description written by the faculty member indicating what will be expected of the student and the way in which the student will be assessed.
3. A statement describing why the student is interested in this project and its relation to future career goals.
4. A PHM599 Special Projects form that may be obtained from the Office of Student and Professional Affairs.

Students should be aware that, depending on the type of research they are participating in, Institutional Review Board (IRB) approval may be necessary from LIU and/or the practice site. Once approval has been granted, both the student and the faculty member will be notified and the student will be required to register for PHM599 during the appropriate semester. All paperwork should be submitted at least four weeks prior to the start of the semester in which the student will register for PHM599.

Credits: 3

Every Fall, Spring and Summer

PHM 610 Acute Care Advanced Pharmacy

Practice Experience

The Acute Care Advanced Pharmacy Practice Experience (APPE) is designed to allow the student the opportunity to develop and use skills based on the knowledge acquired in previous courses with an emphasis on formulating patient-specific care. The student must attain these skills to be prepared to practice pharmacy independently. As an integral member of the health care team, the student will participate in daily work and attending rounds in the acute care setting. This will incorporate rounding in a pharmacy specialty area at a designated hospital or medical center. After completion of the APPE, the student will have gained an appreciation for the application of critical thinking skills through the resolution of drug-related problems encountered during the rotation. The student will be afforded the opportunity to develop critical thinking skills by collecting relevant data, evaluating the data, formulating a judgment from the information presented, and lastly making a decision. While making clinical decisions, this acute care APPE will further develop the student's skills in critical thinking, problem solving, literature evaluation, and written and oral communication.

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 5

Every Fall, Spring and Summer

PHM 611 Ambulatory Care Advanced Pharmacy Practice Experience

Today's ambulatory care pharmacist has tremendous potential to use all of his/her extensive pharmaceutical and therapeutic knowledge to improve patients' quality of life. Upon graduation, the pharmacy student must be able to competently execute the various daily activities performed in providing ambulatory pharmacotherapeutic care (entrustable professional activities) in order to practice the profession effectively. This course is intended to promote entry-level competency in ambulatory care practice in the domains of pharmacist-delivered patient care, public health, communication skills, leadership abilities, and legal considerations by requiring students to apply their knowledge to clinical problems in a realistic context. This learning experience will involve critical thinking, patient assessment, problem solving, and counseling. It also allows the student to develop relationships with patients and enhance his/her communication skills with patients and other health care providers. The pharmacy student will learn to assume responsibility for patients' pharmacotherapeutic and related health problems and to become an integral part of the patient care team. Additionally, the student will enhance his/her skills in drug literature evaluation and interpretation and establish how the findings may apply to clinical practice. Course faculty will utilize modeling and feedback to assist students in successfully visualizing and achieving performance goals. It is intended that upon completion of this clerkship, students will be able to apply the

Pharmacists' Patient Care Process to patients in the outpatient hospital or community clinic setting without direct supervision to prepare for entry-level practice.

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 5

Every Fall, Spring and Summer

PHM 612 Community Practice Advanced Pharmacy Practice Experience

Students are asked to provide direct patient care in a community pharmacy setting. Students are expected to dispense medications under the supervision of a pharmacist and to intervene with prescribers when the situation arises. Students also become competent in recommending nonprescription and alternative therapies, and spend considerable time counseling patients. Students are involved with key administrative duties such as maintaining records and interacting with pharmacists and support personnel.

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 5

Every Fall, Spring and Summer

PHM 613 Institutional Practice Advanced Pharmacy Practice Experience

Students are exposed to all elements of a modern hospital medication distribution system, and the policies, procedures, and committee structure required in an institutional setting. Students are expected to be involved with various institutional committees and participate in administrative assignments. Students provide patient-specific interventions and hone their skills in communicating with other health care professionals including nurses and physicians.

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 5

Every Fall, Spring and Summer

PHM 614 Inpatient General Medicine Advanced Pharmacy Practice Experience

The Internal Medicine Advanced Pharmacy Practice Experience is designed to build upon knowledge, skills, and attitudes acquired in previous courses with emphasis on formulating patient-specific care plans. The student must attain these skills to be prepared to practice pharmacy independently. As an integral member of the health care team, the student will participate in daily work and attending rounds in an inpatient setting. This will incorporate patient-care rounds on an internal medicine or general medicine floor at a designated hospital or medical center. This advanced pharmacy practice experience (APPE) will allow the student, as a member of the interprofessional team, to strengthen his/her patient care skills thereby helping the student to integrate earlier curricular content and principles to the practice of direct patient-care. Clinical decision making during this

APPE will further develop the student's skills in critical thinking, problem solving, literature evaluation, and written and oral communication. As a student pharmacist, he/she will participate in structured activities under the direct supervision of a preceptor.

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 5

Every Fall, Spring and Summer

PHM 615 Senior Seminar

The senior seminar course is an integrative/reflective capstone blended course designed to help transition pharmacy students into professionals by emphasizing self-awareness, written and oral communication, professionalism and leadership. The goals of this course are: 1) to help reinforce the academic rigor of the final year towards successful licensure; 2) to increase student motivation and engagement; 3) to increase career aspirations; 4) to improve student confidence; and 5) to demonstrate proficiency as a future pharmacist. This course will provide support to enhance and reinforce Advanced Pharmacy Practice Experiences (APPEs) and preparation for professional career through intermittent in-person meetings and longitudinal activities.

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 2.50

Every Fall, Spring and Summer

PHM 616 Non-Patient Care Focus Elective Advanced Pharmacy Practice Experience

This elective Advanced Pharmacy Practice Experience will provide the student with an opportunity to apply abilities gained during prior coursework in various pharmacy practice settings. Students will be offered an opportunity to explore areas of interest that are available in non-patient care environments (ex. Drug information, research, pharmaceutical industry, managed care, pharmacy administration, medical communication, etc.).

Course open to students with 6th Year Standing in Pharm.D. Program

Credits: 5

Every Fall, Spring and Summer

PHM 617 Patient Care Elective Advanced Pharmacy Practice Experience

This elective Advanced Pharmacy Practice Experience will provide the student with an opportunity to explore areas of direct patient care that align with his/her professional interest and/or expand students' understanding of patient care opportunities. Students will be expected to utilize abilities, skills, and knowledge learned previously in the curriculum in order to participate in a variety of direct patient care activities, including, but not limited to collecting patient-specific

information, evaluating and monitoring drug therapy, educating patients and caregivers, and responding to drug information inquiries.

Pre requisite: Completion of all PHM 300, PHM 400, and PHM 500 level courses

Credits: 5

Not Set

ADMISSION

Application Process and Deadlines for the Professional Phase (P-3) of the Program

Admission into the professional phase of the program is highly competitive. While objective measures of academic achievement and grade point average (GPA); Pharmacy College Admissions Test (PCAT) score; course load, selection and successful completion rate are heavily considered factors for admission, they are not the sole criteria. In addition to academic competence other selection criteria that may be considered by the college include but are not limited to:

- written and verbal communication skills
- community service and extracurricular activities
- demonstration of leadership
- understanding of the profession of pharmacy and motivation for entering the profession
- work experience
- letters of recommendation, particularly those from alumni of the college and other individuals known to the college
- factors of diversity including, but not limited to, academic and professional background, geography, educational or economic disadvantage, culture and multilingual ability

To receive first consideration, applicants must be currently enrolled in the pre-professional phase of the Doctor of Pharmacy program, must have achieved a GPA of 2.70 in all attempted college work; a GPA of 2.70 in all attempted and required science courses (specifically Biology 1, 2, 101, 137 and 138, Physics 27, Chemistry 3, 4, 121 and 122) and a GPA of 2.70 in all attempted and required math courses (specifically Math 40 and 100). Preference is also given to those applicants who satisfactorily complete all P1 and P2 course requirements by the end of the spring semester for the following fall. An application for admission into the professional phase of the program must be submitted to the college through PharmCAS by the specified deadline date. Students should consult the PharmCAS website to determine the appropriate deadline date. The Pharmacy College Admissions Test (PCAT) is required for admission. An official PCAT score report should be submitted to PharmCAS. A personal interview is required. Not all applicants will be afforded the opportunity for a personal interview. Applicants selected for an interview will be among those in the application pool demonstrating the highest academic achievement and potential. Additional requirements for admission into the professional phase include the ability to meet the technical standards, a criminal background check, and a drug screen.

Students who are accepted and enroll as first-year student pharmacy majors in the pre-professional phase of the program receive preferential consideration for admission into the professional phase of the program provided they complete all pre-professional program requirements by the conclusion of the spring semester of their second year of study. A varying percentage of available seats in each professional class are set aside for such students depending upon the overall number and overall level of demonstrated academic performance of eligible students with institutional preference in any given year. The remaining seats are open to all applicants for the professional phase. Acceptance into the professional phase of the program is not guaranteed for students receiving institutional preference since the ultimate selection is determined through the application of the criteria discussed in the preceding paragraphs. Due to the highly competitive nature of the program, not all students meeting the basic academic requirements of the program will be selected for acceptance into the professional phase.

Students selected for the professional phase of the program (P3) may enter only in the fall semester. Application to the professional phase for external transfer as well as current LIU students is done through the Pharmacy College Admission Service (PharmCAS). The deadline for application to the program is also posted on the college's School Page on the PharmCAS website: (www.pharmacas.org).

Pharmacy Year 3 (P3) PharmCAS deadline:
MAY 3, 2021

Note: Deadline dates are subject to change based on administrative calendar changes. Please consult the admissions website at: www.liu.edu/brooklyn/admissions for more information related to the term of the intended application.

Technical Standards for Admission and Program Continuation

The mission of the Arnold & Marie Schwartz College of Pharmacy and Health Sciences is to prepare students to enter the practice of pharmacy. The following technical standards describe the non-academic qualifications required, in addition to academic performance, that the college considers essential for admission to, and continuance in, the Doctor of Pharmacy (Pharm.D.) program. A candidate for the Pharm.D. degree must possess the skills and abilities of the types listed below. The standards are in place to ensure your success in the program but also to protect the safety of the patients you will manage. Depending on the circumstances, reasonable accommodations for disabilities may be possible

and made available, however, candidates and continuing students are ultimately responsible for performing in a reasonably independent manner.

The college has established these technical standards in the context of the following interests: 1) the rights of applicants and students; 2) the safety of students and patients; and 3) the significant experiential education requirements of the curriculum. These interests and the nature of the educational activities in the Pharm.D. program may prevent some prospective students with disabilities from qualifying for admission and continuing students with disabilities from continuing in the program.

The technical standards described in this document are those that allow an individual to perform at the minimally acceptable level in the identified activity. Applicants and students must be able to satisfy, with or without the use of appropriate auxiliary aids (including prosthetic devices), the following technical standards which relate to physical, cognitive, and behavioral abilities relevant to successful completion of the Pharm.D. program.

- **Observational** – Through the use of visual, auditory, and somatic senses, students must be able to observe lectures, demonstrations, and experiments, read information from a computer screen, and observe a patient at a distance and close-at-hand to accurately assess a patient's physical condition, obtain a patient history, and perform physical assessments.
- **Communications** – Students should be able to speak, hear, and observe patients in order to elicit information and perceive non-verbal communication such as facial expressions, effects, and body language. Communication skills include the appropriate use of spoken and written English.
- **Behavioral and Social Attributes** – Students should demonstrate maturity, integrity, compassion and respect for others. The student must possess the emotional and mental health required for full use of their intellectual abilities.
- **Motor** – The student must have sufficient motor skills necessary to prepare all routine forms of medication orders including compounding, administering, and dispensing; and be able to elicit patient information through the use of physical assessment techniques.
- **Intellectual, Conceptual, Integrative and Quantitative Ability** – Students must have effective and efficient learning skills to master an entry-level doctorate program. They must be able to learn through a variety of teaching methods (e.g. classroom instruction, small group activities, individual study, experiential activities, and self-learning. Students must be able to read, comprehend, analyze, and interpret data in order to respond to information related to medical situations in an organized manner. Intellectual abilities must be sufficient enough to analyze and synthesize information from a

large variety of sources.

The college does not discriminate against qualified disabled individuals and works with the university's campus-based Office of Student Support Services to support qualified students with documented disabilities in fully participating in all college programs and activities. Methods toward achieving success and/or equal opportunities include academic adjustments, auxiliary aids and services, and other reasonable accommodations that may be provided to individuals to remove or lessen the effects of disability-related barriers. Examples of auxiliary aids and services include providing sign language interpreters or other assistive technology.

The applicant should evaluate him/herself for compliance with these technical standards. Submission of an affidavit will serve as testimony the student has read and understands these standards and acknowledges compliance with them.

Transfer from Other Colleges of Pharmacy

Students seeking transfer from colleges of pharmacy accredited by the Accreditation Council for Pharmacy Education (ACPE) must provide, in addition to official transcripts of all academic work, a statement of their reasons for seeking transfer and a letter of evaluation from the dean of their present college of pharmacy.

Students Presenting Foreign Credentials

International applicants must submit all academic credentials, including a record of secondary school grades for the final three years, and results of any examination rendering a student eligible for university matriculation in his or her own country. Students are expected to have demonstrated adequate preparation in mathematics and English. All documents submitted must be translated into English and notarized.

All applicants are required to present their results on the Scholastic Aptitude Test (SAT). The Test of English as a Foreign Language (TOEFL) is required of all students for whom English is not the native language.

International students seeking transfer credit for coursework completed at a non-U.S. college or university must present official transcripts from each institution attended and an official syllabus (written in or translated into English) showing the duration and content of each course for which transfer credit is sought.

Health insurance coverage is compulsory for all international students including their dependents. Information pertaining to the health insurance coverage may be obtained from the Office of International Student Services, which assists students on campus.

Students holding F-1 (student) visas are required by law to be fully matriculated and be registered for at least 12 credit hours per semester.

Proficiency in the English language is required, and a student who needs additional study in English may be required to take English courses for international students at LIU.

Applications from international students must be accompanied by a nonrefundable application fee and received no later than May 1 for the fall semester and November 1 for the spring semester. When credentials are complete and found to be satisfactory, the applicant will be required to submit a \$500 deposit and a certified statement of financial support. The deposit will be applied to tuition and is not refundable should the student decide not to attend the university. An I-20AB or IAP-66 form will be issued upon receipt of the deposit and statement of financial support. Students should not make plans to come to the United States until they have received the immigration form.

Students should be aware of the high cost of living in New York City and the tuition rates and come prepared to finance their education. A limited number of scholarships are available to students on non-immigrant visas and are awarded primarily to students who have been in attendance for at least one year.

Veterans

The rules for admission and advanced credit for veterans under federal and state laws are the same as those for other students.

Visiting Students

The college accepts visiting students who wish to audit or enroll for credit in pharmacy courses on a non-matriculated basis, depending on space availability. Such applicants must submit a Visiting Student Application (available from the Office of Admissions) indicating the specific courses for which they wish to enroll. Applicants who have completed all stated prerequisites will be allowed to enroll, with the approval of the course instructor(s).

Readmission

If a student has been in good academic standing, has withdrawn from all courses and desires to return to LIU Pharmacy within one year of his/her withdrawal, he/she may be considered for readmission by completing an application for readmission, available from the Admissions Office, subject to the approval of the Assistant Dean for Admissions and Professional Affairs and/or the Assistant Dean for Academic and Student Affairs. Students are advised that readmission is not guaranteed except in such cases where a leave of absence has been granted by the Assistant Dean for Academic and Student Affairs

and then only within the time frame established for the leave of absence. Students who have been withdrawn from the college for more than one year are generally not granted readmission. Such time limits do not apply to students who have been fulfilling service requirements in the Armed Forces of the United States.

If a student has been suspended or dismissed for disciplinary reasons and desires to return to LIU Pharmacy, his/her application for readmission is referred to the Assistant Dean for Academic and Student Affairs. The Assistant Dean's office will advise the student of the following procedure which may be required for readmission: the student may be granted a hearing by the appropriate faculty committee for consideration of action on his/her readmission application. The student is required to submit a written petition stating the nature of his/her problems and a workable solution to those problems. The application for readmission and the petition are then considered by the appropriate faculty committee. The student may be requested to appear before this committee to substantiate his/her position and answer questions. The committee then makes its recommendations and/or recommends performance conditions on the readmission application to the Assistant Dean for Academic and Student Affairs. The college is not obligated to reconsider an application for readmission.

If a student has been on academic probation, has withdrawn from all classes and desires to return to LIU Pharmacy, his/her application for readmission is referred to the Assistant Dean for Academic and Student Affairs. The Assistant Dean's office will advise the student of the procedure described above, which may be required for his/her readmission. If the Assistant Dean approves the recommendations of the committee for readmission, such student will be readmitted and is on probation.

New York State Immunization Law

The New York State Health Department requires college and university students born on or after January 1, 1957, to be immunized against measles, mumps and rubella. All students attending the university, including matriculants and non-degree students, must show proof of immunity if they wish to register for classes. In addition, New York State requires that LIU Brooklyn maintain a record of each student's response to the meningococcal disease and vaccine information. The form must be signed by the student and contain either a record of meningitis immunization within the past 10 years OR an acknowledgment of meningococcal disease risk and refusal of meningitis immunization signed by the student.

For information on student procedures for

complying with this law, please contact Campus
Life at 718-488-1042.

PHARM. D. PROGRAM QUALITY INDICATORS

In compliance with accreditation guidelines, LIU Pharmacy regularly makes available various quality indicators for the Doctor of Pharmacy program. These are presented below.

On-time Graduation Rates

On-time graduation rates for recent class cohorts:

Class Year	On-time Graduation Rate
2020	<ul style="list-style-type: none"> 219 students were admitted in 2016 as the class of 2020 182 graduated on time 8 students were academically dismissed; 10 students voluntarily withdrew; 19 students will have a delayed graduation The on-time graduation rate is 83% (182/219)
2019	<ul style="list-style-type: none"> 200 students were admitted in 2015 as the class of 2019 184 graduated on time 3 students were academically dismissed; 5 students voluntarily withdrew; 8 students will have a delayed graduation The on-time graduation rate is 92% (184/200)
2018	<ul style="list-style-type: none"> 205 students were admitted in 2014 as the class of 2018 186 graduated on time 5 students were academically dismissed; 12 students voluntarily withdrew; 2 students will have a delayed graduation The on-time graduation rate is 90.7% (186/205)
2017	<ul style="list-style-type: none"> 200 students were admitted in 2013 as the class of 2017 161 graduated on time 8 students were academically dismissed; 12 students voluntarily withdrew; 19 students will have a delayed graduation The on-time graduation rate is 80.5% (161/200)
2016	<ul style="list-style-type: none"> 193 students were admitted in 2012 as the class of 2016 167 graduated on time 4 students were academically dismissed; 8 students voluntarily withdrew; 14 students will have a delayed graduation The on-time graduation rate is 86.5% (167/193)

2015	<ul style="list-style-type: none"> 209 students were admitted in 2011 as the class of 2015 182 graduated on time 6 students were academically dismissed; 8 students voluntarily withdrew; 13 students will have a delayed graduation The on-time graduation rate is 87.1% (182/209)
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- 42.9% (78/182) graduating on-time students received Latin honors (GPA of 3.50 or greater)
- 12.6% (23/182) graduated *summa cum laude* (GPA of 3.80 or greater)
 - 9.3% (17/182) graduated *magna cum laude* (GPA of 3.70 or greater)
 - 20.9% (38/182) graduated *cum laude* (GPA of 3.50 or greater)

Pharmacist Licensing Examinations

Holders of the Doctor of Pharmacy degree who have fulfilled all scholastic requirements may sit for the state board of pharmacy licensing examinations. Graduating students are advised to carefully consult with the boards of pharmacy in the states they are considering to obtain licensure to ensure they comply with regulations concerning internship and licensure requirements.

North American Pharmacist Licensure

Examination (NAPLEX) Pass rates:

Class of 2018 first-time takers (187 candidates);

Pass rate: 85.03%

Class of 2019 first-time takers (168 candidates);

Pass rate: 76.79%

Class of 2020 first-time takers (161 candidates);

Pass rate: 82.61%

Multistate Pharmacy Jurisprudence

Examination (MPJE) Pass rates:

Class of 2018 first-time takers (164 candidates);

Pass rate: 76.83%

Class of 2019 first-time takers (147 candidates);

Pass rate: 77.55%

Class of 2020 first-time takers (148 candidates);

Pass rate: 75.68%

Post-graduation Placements

Class of 2019 Placement*

- 50.3% (93/185) employed in community pharmacy
- 16.2% (30/185) employed in hospital pharmacy
- 3.8% (7/185) employed in pharmaceutical-related industry
- 2% (4/185) other pharmacy-related employment
- 2.7% (5/185) unemployment or actively seeking placement
- 10.8% (20/185) participating in a post-graduate residency
- 3.2% (6/185) participating in a post-graduate fellowship

*Includes information on students who graduated on time. Employment determined through survey, direct contact with graduates, through employer and/or other methodology through June 2020.

Unable to identify the status of 20 graduates.

Other Quality Indicators

Class of 2020 Academic Honors

ACADEMIC POLICY

Academic Responsibility

Candidates for a professional degree from LIU Pharmacy are expected to know the graduation requirements set forth in this publication. It is the responsibility of the student to know and comply with the academic requirements and regulations of the college as well as those of LIU.

All students must seek the counsel of an academic advisor. Students must also meet basic standards of performance established for each class with respect to attendance, promptness in completing assignments, correct English usage, accuracy in calculations, neatness and general quality of workmanship. Fulfillment of these fundamental responsibilities must be recognized by the student as an essential prerequisite to achieving satisfactory academic standing and to being recommended by the faculty for a degree.

Full-Time Students

A full-time student is one who is carrying 12 or more credit hours in each semester. Sixth-year students registered for six or more credits in the summer are considered full-time for the summer session.

Academic Status

Third-Year Student: A student who has completed the preprofessional requirements with a preferred GPA of 3.000

Fourth-Year Student: A student who has finished all third-year courses with a minimum GPA of 2.000

Fifth-Year Student: A student who has completed all fourth-year courses with a minimum GPA of 2.000

Sixth-Year Student: A student who has completed all fifth-year courses with a minimum GPA of 2.000

Summer Session(s)

A maximum of eight credit hours of coursework is allowed during any one summer session except for students in the shared credit programs and sixth-year PharmD students' advanced practice experiences or by special permission from the Assistant Dean for Academic and Student Affairs.

Residency / Policy for Taking Courses at Another Institution

All courses for the professional phase of the Doctor of Pharmacy program (years 3-6) must be taken in residence at LIU Pharmacy. Pre-professional matriculated students at LIU

Brooklyn may only take courses at another institution as a visiting student under the following conditions:

1. Students must file an "Application to Take Courses at Another Institution" with their respective dean's office. Students must provide evidence of course equivalency to the corresponding LIU Brooklyn course. Note: Permission must be granted by the dean, not the student's academic advisor.
2. The other institution must be a four-year accredited institution (two-year community colleges are unacceptable).
3. Students may not take a course at another institution within the New York City metropolitan area (within a 50-mile radius of LIU Brooklyn) if the course is being offered at LIU Brooklyn.
4. If a course required for graduation is not being offered at LIU Brooklyn in a given semester, or the student lives outside the New York City metropolitan area, then permission can be considered.
5. Students must be in good academic standing; students on academic probation cannot be granted permission to attend other institutions.
6. The visiting student authorization becomes automatically invalid if, by the conclusion of the term during which it is granted, the student is placed on academic probation.
7. Only letter grades of C or above are acceptable for transfer credit. Grades of D or P are not transferable. Grades earned at another institution are not used in the computation of either the student's major or cumulative average, they do not remove F grades earned at LIU Brooklyn, nor do they count toward fulfillment of residence requirements or the requirements for graduation with honors.
8. Visiting student authorizations are granted for a maximum of 9 credits.

Grades and Symbols

Grading Scale:

Each course syllabus provides a course-specific grading scale.

Standard mathematical rules apply to rounding to tenths place of the grade.

The following grades are used: A, A-, B+, B, B-, C+, C, C-, D, F, P.

The following symbols are used:

INC: The symbol INC (Incomplete) may be assigned if, for reasons acceptable to the instructor, a student has failed to complete a part of the required coursework. An INC is given only at the discretion of the faculty member. It is the student's responsibility to make specific arrangements with the instructor to complete the coursework and to have the grade submitted to Enrollment Services before the end of the next semester. If the course is completed within the next semester, both the INC and the final grade will appear on the student's permanent record.

Satisfactory completion of the course does not eliminate the original "Incomplete" designation. An INC grade that is not made up during the next semester becomes an F.

W: The symbol W (Withdraw) is assigned when a student officially withdraws from a course in which the student was doing satisfactory work. Students must obtain a Withdrawal Form from Enrollment Services and have this form signed by the instructor of the course(s) concerned. (See also under WITHDRAWAL.)

UW: The symbol UW (Unauthorized Withdrawal) is assigned when a student unofficially withdraws from a course, never attended or stopped attending a class but did not follow official withdrawal procedures. The UW is not computed in the student's average.

Grades of P, W, UW are recorded on a student's transcript, but not computed in student average (Refer to LIU Brooklyn Enrollment Policies & the Arnold & Marie Schwartz College of Pharmacy and Health Sciences Bulletin for further information)

Quality Points

The quality point value 4.000 has been assigned to the grade of A, 3.667 to the grade of A-, 3.333 to B+, 3.000 to B, 2.667 to B-, 2.333 to C+, 2.000 to C, 1.667 to C-, 1.000 to D, and 0.000 to F. The quality points to which a student is entitled are computed by the formula $X = N \times Y$, where X is the number of quality points, N the quality point value assigned to the grade, and Y is the number of credits.

The GPA is obtained by dividing the sum of the quality points received in all courses by the total number of credits, including unrepeatable F's. A credit is equivalent to 1 lecture or recitation hour and/or 2-3 laboratory hours per semester.

GPA computations are carried to the third decimal place from which rounding takes place to the second decimal place. For example, a computed GPA of 2.994 will be rounded down to 2.990. A computed GPA of 2.995 will be rounded up to 3.000. On all official LIU transcripts, a GPA will be displayed to three decimal places with the third decimal place always being zero due to rounding.

To graduate, a student must have a GPA of no less than 2.000 in all work and no less than 2.000 in the professional coursework.

Dean's List

The Dean's List for each semester of each class year consists of those matriculated students who are registered in that class year, have completed at least 12 credits during that semester, received a passing grade in every subject for that semester and achieved a GPA of 3.500 or more for that semester. Students who earn a D, F, W, UW, or

INC in any semester, even though the symbols are subsequently changed to grades, may not be placed on the Dean's List for that semester. A student who does not receive an official grade in any semester will not be placed on the Dean's list until the official grade is handed in, excluding those listed above, that otherwise qualifies the student for the Dean's list.

Attendance

Successful work in LIU Pharmacy is dependent upon regular class attendance. All students are expected to attend classes and participate in classroom activities. Faculty have the right to weigh attendance and class participation in determining grades. Consequently, excessive absences may impact negatively the evaluation of a student's performance.

Preprofessional pharmacy students should consult the LIU Brooklyn Undergraduate Bulletin regarding attendance requirements.

For students enrolled in years P-3, P-4, P-5 and P-6, faculty will inform students at the beginning of each semester of policies governing attendance as written in the course outline or syllabus distributed to the students.

Attendance is required of all students in years P-3, P-4, P-5 and P-6 in recitations, laboratories and in Introductory and Advanced Pharmacy Practice Experiences. Students in the experiential programs may be permitted to leave the sites from time to time when returning to the college for special events, upon the approval of the preceptors.

Tardiness

Students are expected to be present from the beginning of classes and laboratories until the instructor dismisses them. Students are expected to comply with the hours set by preceptors for experiential courses. If students arrive late, they may be denied admission or marked absent. Habitual tardiness and/or failure to attend hours set by preceptors for experiential courses may impact negatively on the evaluation of a student's performance.

Examinations

Absence from Tests and Examinations

If a student is absent from any test or examination, including a final examination, the instructor may afford or deny him or her an opportunity to make up the work that was missed. In such cases, the instructor is the sole judge of the validity of the student's excuse.

Absence from a Final Examination

Any student who for any reason is absent from a final examination and who wishes to take a deferred final examination is required to apply, in writing, within five days to the Assistant Dean for Academic and Student Affairs to ask for permission to take a deferred final examination, giving the reason for the absence from the

examination. The student also may need permission from the course instructor, as noted in individual syllabi.

If the absence was caused by sickness or injury, the letter must be accompanied by a medical certificate stating when the illness began or the injury was sustained, and the number of days of confinement recommended by the physician. If the absence was caused by death in the immediate family, the student must provide documentation indicating the date of death and the relationship to the deceased.

Graduation Requirements

Upon recommendation of the faculty and approval by the board of trustees, the Doctor of Pharmacy is conferred by LIU upon a candidate who has met the following requirements:

1. Satisfactory completion of the full prescribed curriculum or two or more years in this college and the required equivalent courses in some other registered and accredited college of pharmacy, or departments of a university.
2. Maintenance of a 2.000 or "C" cumulative GPA in all preprofessional coursework completed and, separately, in the professional courses offered in the years P3 through P6.
3. Satisfactory demonstration of computer competency.
4. Satisfactory completion of the minimum requirements of the Writing Across the Curriculum program or equivalent coursework as defined by the college.
5. Successful completion of all co-curricular requirements P3-P6.
6. Satisfactory completion of Professional Development Portfolio requirements.
7. Satisfactory completion of Interprofessional Education requirements.
8. Settlement of all accounts with the university, including the graduation fee.
9. Evidence of good ethical and professional character.

Students have until the time of their graduation to have changes made to their academic records. Once a student has graduated, the academic record cannot be changed retroactively.

Degrees with Distinction

Students who have completed at least 60 percent of their credits in residence at the college and have achieved a grade point average of 3.500, 3.700, or 3.800 may receive a Doctor of Pharmacy degree *cum laude*, *magna cum laude*, or *summa cum laude*, respectively.

Academic Standards

The college reserves the right to dismiss, suspend, or probate, at any time, a student whose academic record is unsatisfactory. Prior notification or prior academic probation is not a

necessary precursor to academic dismissal or suspension of students who have unsatisfactory academic records or progress. Any student who at any time fails to demonstrate satisfactory progress shall be subject to immediate academic dismissal or suspension upon determination or opinion of the college that the noncompliance with satisfactory progress is of such nature that a period of academic probation shall not be afforded to the student. To be in good standing, a student must make satisfactory progress toward fulfilling all requirements of the program in which he or she is enrolled. Failure to do so will be cause for academic dismissal.

Satisfactory progress is ordinarily demonstrated by completing the professional phase of the Doctor of Pharmacy program in the projected four-year time frame; completing the necessary required and elective courses; maintaining an overall cumulative GPA of 2.000 or greater in all courses attempted; maintaining a cumulative GPA of 2.000 or greater in all professional pharmacy courses attempted that are herein prescribed for the professional phase of study; achieving a semester, term or session GPA of 2.000 or greater for each semester, term or session attended; and satisfactory and timely completion of additional program requirements, such as completion of the LIU Brooklyn proficiency examinations in computer literacy, satisfaction of the requirements of the Writing Across the Curriculum Program, certification in first aid and cardiopulmonary resuscitation, and certification in pharmacist-based immunization delivery.

LIU Pharmacy is cognizant that there may be a variety of reasons why students may not complete the professional phase of the Doctor of Pharmacy program in the projected four-year time frame. Students who meet all other requirements for satisfactory progress ordinarily are not considered to be making unsatisfactory progress, should they require additional courses as a result of their LIU Brooklyn English and/or mathematics placement, should personal circumstances require a leave of absence from the college or a reduced schedule, if service requirements for students serving in the armed forces of the United States delay their progress, or if progress has been delayed as a result of unsatisfactory completion of the course(s) or as a condition of required remediation due to the academic probationary status of the student. Upon entering the professional phase of the program (third year) the maximum allowable time for the completion of all requirements and the awarding of the Doctor of Pharmacy degree is six years for the projected remaining four years (third, fourth, fifth, and sixth years), exclusive of time spent in the armed forces. Students may file a request for an extension of the maximum allowable time with the Assistant Dean for Academic and Student Affairs. Students should include in their request an explanation of the circumstances under which they require an extension to complete their degree requirements.

The Assistant Dean for Academic and Student Affairs will consider the request and may consult with the college's Scholastic Committee regarding the request. The student will be duly notified as to whether or not his or her request for an extension has been granted. Any courses outside the time limit will not count as credits toward the degree unless approved in writing by the Assistant Dean for Academic and Student Affairs.

Failure to satisfy any of the indicators of satisfactory progress is cause for academic dismissal, suspension, or probation and any one or more of the three (dismissal, suspension, or probation) will be applied immediately upon failure to maintain satisfactory progress. If dismissal or suspension are not applied, then probation will apply.

Academic probation is most typically the initial official action for a student failing to make satisfactory progress. Every attempt is made by LIU Pharmacy to duly notify students that they have been placed on probation. Students in LIU Pharmacy, as students enrolled in a professional program, are expected to be fully aware of the requirements for satisfactory progress and are expected to be fully capable of determining whether their own academic progress is in compliance with the requirements for satisfactory progress. As such, all students are further expected to understand that if academic dismissal or suspension is not immediately applied in their case that their status is probationary, whether or not they receive notification from LIU Pharmacy in that regard. All students failing to make satisfactory progress are expected to take initiative towards remediation of unsatisfactory progress.

Early Intervention Program

The early intervention program identifies students in academic difficulty through close monitoring of the midterms grades and followed by immediate counseling action. Course coordinators and instructors are required to notify the Office of the Assistant Dean for Academic and Student Affairs of any student who has earned a grade of D or F. A student will be contacted by e-mail as part of the early intervention program and must meet with an advisor for counseling

Grade Point Average (GPA)

Calculation of the *professional* grade point average (GPA) will include all required professional courses and PHM electives completed when enrolled in the Doctor of Pharmacy Program. All courses taken at LIU are included in the *cumulative* GPA. Semester and professional GPA will be reviewed at the end of course completion for courses that complete within a semester and at the end of each semester, summer, and professional year. Students must achieve a semester, term or session GPA of 2.00 (4.00 scale) or greater for each semester, term or session attended during the College's Professional Program to remain in good/acceptable academic standing. Students must maintain an overall cumulative GPA of 2.00 (4.00 scale) or greater in

all courses attempted during the College's Professional Program to remain in good/acceptable academic standing.

Academic Probation

Academic Review

Students who qualify for academic review but are not on probation will be required to meet with their advisor throughout the semester regarding their academic progression. Students may be recommended to participate in the specified study or help groups, or probationary workshops.

Academic Probation

Academic Probation represents notice to a student demonstrating an ongoing subpar academic performance. The maximum number of semesters, terms or sessions exclusive of summer sessions, of academic probation permitted, is two during the professional phase (P-3, P-4, P-5 and P-6) of study.

- The two semesters may be either consecutive or separate.
- A student on probation for two consecutive semesters will be afforded a comprehensive plan to return to an acceptable academic standing.
- A student who would qualify for a third semester of probation will be academically dismissed from the college.
- Any student on academic probation must meet with their academic advisor and faculty mentor a minimum of twice in a semester and will be required to attend academic workshops.
- A student will be notified in writing of placement on academic probation. A student will be removed from academic probation when the student demonstrates adequate academic performance.

Extracurricular Activities during Academic Probation

- A student who has been placed on academic probation is limited from participating in extracurricular activities.
- A student on probation may hold membership in clubs, organizations or fraternal societies.
- A student on probation is barred from holding any office, chair or committee seat in such clubs, organizations, and fraternal societies, and from serving on any standing committee, and from traveling on behalf of the College or University.
- A student on probation may attend lectures or other events sponsored by such clubs, organizations, and fraternal societies and/or by the college that are deemed to be of an educational nature.
- A student on probation is barred from participating in research projects either in a volunteer status or as part of PHM599 as outlined in the syllabus.

Academic Delay

- A corrective plan to minimize the student's academic delay will be drafted by a College of

Pharmacy academic advisor in consultation with the student and approved by the Assistant Dean for Academic and Student Affairs for the College of Pharmacy.

- Corrective plans are per academic year.

GPA/Grade Combination Status

Recommendation

The following table outlines recommendations based on GPA and/or grade combinations earned in a single semester or earned cumulatively throughout the professional Doctor of Pharmacy Program:

GPA/Grade Combinations	Recommendations if GPA/Grade Combinations earned in the following	
	Single Semester	Cumulative in Professional Phase
GPA less than 2.00	Academic Probation	Academic Probation
Single F or D	Academic Review	Not Applicable
D, D	Academic Probation	Academic Review
D, D, D	Academic Probation	Academic Review
D, F	Academic Probation and Academic Delay	Academic Review
F, F	Academic Probation and Academic Delay	Academic Review
D, D, F	Academic Probation and Academic Delay	Academic Review
D, F, F	Academic Probation and Academic Delay	Academic Review

Repeating Courses

- Students may repeat any course to improve the grade, no matter what the previous grade. The second grade, whether higher or lower, will be used in the computation in the GPA. To repeat a course more than once, students must have permission from the Assistant Dean for Academic and Student Affairs. If a course is taken more than twice, all grades after the first will be computed into the student's GPA.
- Any professional course in which a grade of F was earned, must be successfully repeated as soon as the course is offered again (exclusive of summer sessions).
- A course in which a grade of C was earned, may be repeated only if all courses in which a grade of F, D, or C- previously earned have

been successfully repeated with a grade of C or better.

- A required course in the professional curriculum may not be repeated more than twice. Failing a required professional course three times is cause for dismissal. Credit will be earned only once, and the second grade, whether higher or lower, will be computed in the student's GPA. After the second time, a student takes a course, all grades except the first will be computed in the student's GPA.
- The college is not obligated to offer courses that the student has failed in the academic term immediately following the failure.

Course Remediation

Refer to Didactic Course Remediation for the Doctor of Pharmacy Program Policy.

Academic Suspension

Academic suspension may occur in those cases when it is the determination of LIU Pharmacy that the particulars of a student's failure to achieve satisfactory progress are of such nature that a period of time away from the college would likely improve the prospects for remediation of unsatisfactory progress when the student is permitted to resume his/her studies. By way of example, academic suspension might be prescribed when a student indicates that his/her failure to maintain satisfactory progress is due to some type of personal circumstances, such as infirmity, family problems or economic difficulties. In such cases, the college may require a period of academic suspension of from one-to-two semesters of study until such time that the extenuating causes that have been determined to be factors in the student's unsatisfactory progress have been reasonably ameliorated. Academic suspension may also be applied when the student's academic difficulties have created a situation where he/she may need to repeat courses in order to meet the prerequisite qualifications to move forward into the next term of study.

Academic Dismissal

The college reserves the right, as previously noted, to academically dismiss a student at any time if a determination is made, after a thorough review by the Assistant Dean for Academic and Student Affairs and/or the Scholastic Committee of the college, that the student's academic record is unsatisfactory or otherwise does not comply for any reason with the standards of satisfactory academic progress.

The following table outlines academic situations where an academic dismissal will be applied:

Professional Cumulative Grade Combinations (Cumulative grades include both initial and new grades for repeated courses)	1) F, F, F 2) D, D, D, D 3) D, D, D, F 4) D, D, F, F
Semesters on probation	3 semesters
Under special circumstances, a student may be dismissed irrespective of GPAA based on a single semester's unsuccessful course performance.	

Appeal Process of Academic dismissal or progression

A student may appeal an academic dismissal or progression in the professional phase of the Doctor of Pharmacy Program by petition to the Scholastic Committee of the College, in writing and no sooner than 14 days, but within 30 days of receipt of the action letter. The petition should include a thorough analysis by the student of the reasons for having failed to maintain satisfactory academic progress. The petition must also include a comprehensive plan for rectifying the student's deficiencies within a reasonable period of time. The appeal is considered by the Scholastic Committee who makes a final recommendation to the Assistant Dean for Academic and Student Affairs. Students are advised that successful appeals of academic dismissals are rare and usually occur only in those circumstances where substantive underlying causes for unsatisfactory academic progress were previously unknown to the college. Generally, as noted above, in cases where substantive underlying causes exist for unsatisfactory progress, an extension of academic probation will have been granted to allow the student additional opportunity to remedy his/her noncompliance with satisfactory academic progress.

Decisions of the Scholastic Committee and/or the Assistant Dean for Academic and Student Affairs that a student believes may demonstrate arbitrary and capricious treatment or to be fundamentally unfair may be appealed, as a final step, to the Council of Deans. The student should provide a written petition within 14 days of receipt of the letter.

The Council of Deans may grant an appeal only if a student can demonstrate one of the following:

- Further documentation (e.g. death certificate, proof of hospitalization) not available to the Committee at the time of initial decision
- Extenuating circumstances or alternative solutions to the decision
- Documented bias of one or more Committee members
- Procedural error

Readmission

Students who are dismissed from the College and are granted an opportunity to be readmitted will

have stipulations placed upon their readmission. These stipulations may include a requirement that a student repeat course(s) previously taken, regardless of the grade(s) earned in the course(s). Students may be required to repeat an entire year or years of the Professional Doctor of Pharmacy Program. Other stipulations may include but are not limited to the following: regular follow-up with an advisor or faculty member; obtaining specific medical or physiological care; participation in specified study or tutoring group; participation in probationary workshops. Students who are readmitted to the College following academic dismissal may be readmitted on probationary status with the following requirements:

- Maintain a minimum GPA of 2.0 with no earned grade of F and no option of remediation
- If dismissed a second time from the Doctor of Pharmacy Program, the student will not be allowed to apply for re-admission or allowed to appeal the second dismissal
- Create and maintain a plan of action, and submit documentation to support the plan of action.

Criminal Background and Drug Testing

A criminal conviction and/or the use of illegal drugs may impede or bar your entry into your chosen field of study. Students seeking entrance into many fields of study including counseling, education, and health and human services professions should be aware that a criminal record can result in the refusal of licensing/certification/registration agencies to issue the credential needed to practice in that field of study. Prospective and current students are urged to contact the pertinent state and/or federal licensing agency to inquire whether a criminal record will have an impact on licensure or certification eligibility. Many clinical/field experience affiliates now require the completion of criminal background checks and/or drug testing for employees, volunteers and students affiliated with the site. Therefore, students who plan to participate in a clinical/field experience during the Doctor of Pharmacy Program will be asked to undergo a criminal background check, and/or a drug screen according to established policies. All screenings are to be done at the student's own expense and only those completed by the approved program vendor(s) will be accepted. Students should be aware that our clinical/field affiliates may reject or remove a student from the site if a criminal record is discovered or if a drug test is positive. In the event that a student is rejected from a clinical/field site due to information contained in the criminal background check or drug screen, the student may be unable to complete a required clinical/field experience. In such an event, the student may be advised to withdraw from the

program.

Policy/Procedure on Criminal Background Checks for Doctor of Pharmacy Students Process/procedures

LIU Pharmacy requires each student in the professional program to obtain an annual criminal background check report. The Office of Experiential Education uses CastleBranch to perform background checks. Contact information for CastleBranch is as follows:

- Toll-free: 888.914.7279
- Email (for students):
servicedesk.cu@castlebranch.com
- <https://portal.castlebranch.com/LQ33>

The Office of Experiential Education initiates the background check process by emailing the students a reminder of this requirement and provides a deadline for completion. Instructions for completing the criminal background checks are found on RxPreceptor by going to "Communications/Support" then "Document Library". The document is titled, "Instructions for Completing a Criminal Background Check". Students are required to follow all instructions provided by CastleBranch and complete the process within the allotted time frame. Failure to complete the screening within the allotted time frame may result in an inability to participate in experiential education, including withdrawal from assigned course/site, and possible disciplinary action. Students are responsible for all fees associated with the screening.

Results of the background checks are available to students by the vendor (CastleBranch) within a few days after completion. It is the student's responsibility to obtain copies of his/her reports to share with experiential sites upon request. Instruction for obtaining copies of reports may be found on RxPreceptor by going to "Communications/Support" then "Document Library". The document is titled, "Instructions for obtaining a copy of Criminal Background Check Report". Completed reports are also emailed to the Office of Experiential Education by the vendor. Results from a company other than CastleBranch will not be accepted by the College. Practice sites may request that students complete additional background checks. It is the responsibility of the student to comply with site policies for background checks and/or provide practice sites with a copy of the results (if requested). Practice sites reserve the right to require screening by any vendor acceptable to them.

Any questionable findings from the criminal background check will be flagged by CastleBranch and will be reviewed on an individual basis by the members of the Office of Experiential Education and may be shared with the Criminal Background Check and Drug Screening Review Committee, Assistant Dean for Academic and Student Affairs, legal counsel, or other designated individuals. Questionable findings obtained from criminal background checks may delay or prevent students from completing introductory and/or advanced

pharmacy practice experiences (IPPEs and/or APPEs), continuing in the program, and/or graduating.

Review of Background Check Results

Students have the right to review the information reported by the designated vendor for accuracy and completeness and to request that they verify that the criminal background information provided is correct. All disputes pertaining to the criminal background check findings must be communicated in writing directly to the contracted company that conducted the check (Email (for students): servicedesk.cu@castlebranch.com). In addition, the student must inform the Office of Experiential Education by emailing a copy of the complaint statement to Bkln-OEE@liu.edu and include "Dispute of Criminal Background Check Results" in the subject line. Re-verification will be made if the company determines that reasonable grounds exist. If parts of the report are deleted or changed because of verification, the Office of Experiential Education and the student will receive a corrected report.

Results from the criminal background check will be reviewed as follows:

- The report submitted to the College by the vendor will be reviewed by members of the Office of Experiential Education.
- If the report shows a questionable finding, a representative from the Office of Experiential Education may request that the student submit additional information relating to the finding(s) on the report, such as a written explanation, court documents and/or police reports.
- Prior to making a final determination that will adversely affect the student, the Office of Experiential Education will inform the student of his or her rights and the procedures regarding how to challenge the accuracy of the criminal background check report.
- If deemed necessary, The Director of Experiential Education will submit the report and any additional information provided by the student for review by other designated individuals, such as but not limited to, The Criminal Background Check and Drug Screening Review Committee. The Director of Experiential Education will forward this information as soon as possible after the disclosure or discovery of the questionable finding(s).
- If convened, the Criminal Background Check and Drug Screening Review Committee will review all information provided and provide a formal, written recommendation to the Assistant Dean for Academic and Student Affairs. Recommendations from the Criminal Background Check and Drug Screening Review Committee may include:
 - Allow the student to proceed in the academic program without restriction
 - Allow the student to proceed in the academic program with specified terms and conditions
 - Suspend the student or arrange for a leave of absence to address the issue(s) identified

- Dismiss the student
- The Assistant Dean for Academic and Student Affairs will review the Committee's recommendation and make a final decision, which will be communicated to the student and the Office of Experiential Education in writing.
- The Assistant Dean for Academic and Student Affairs, with or without the involvement of other designated individuals, may dismiss the student, suspend the student, or require the student to comply with specific terms and conditions for any duration of participation in the program. Notification from the University/College that a student is dismissed, suspended, or otherwise required to comply with set conditions will be done via a letter from the Office of Student and Professional Affairs. A student may appeal that decision in accordance with the University's grievance procedure found in the LIU Pharmacy Bulletin and on the Long Island University website at

<http://www.liu.edu/Brooklyn/Academics/Bulletins/Pharmacy-Bulletin>

College Disclaimer

The LIU Pharmacy Criminal Background Check process does not guarantee the safety of students, patients, faculty, or staff. In addition, an acceptable criminal background check, as defined by the College, state, or experiential site; does not guarantee the student will be eligible to complete the program or obtain a license to practice pharmacy upon graduation.

Fair Credit Reporting Act

If an employer hires an outside individual or firm to conduct a criminal background check, the employer is subject to the Fair Credit Reporting Act (FCRA). Although FCRA does not explicitly include educational institutions, the applicability to colleges and schools of pharmacy may depend on legal interpretation and circumstances. A link to an individual's rights under the federal Fair Credit Report Act (FCRA) 15 U.S.C. § 1681 et seq. A copy of the FCRA is available online at <http://www.ftc.gov/bcp/online/pubs/credit/fcrasummary.pdf>

Policy/Procedure Drug Screening for Doctor of Pharmacy Students Process/procedures

LIU Pharmacy requires each student in the professional program to obtain an annual random drug screen. The Office of Experiential Education uses CastleBranch to perform drug screening. Contact information for CastleBranch is as follows:

- Toll-free: 888.914.7279
- Email (for students):
servicedesk.cu@castlebranch.com
- <https://portal.castlebranch.com/LQ33>

Students are made aware of the requirement during initial orientation at the beginning of the P-3 year but since screening is random, they are not provided the time frames in advance. The Office of Experiential Education initiates the drug screen process by emailing the students a reminder of this

requirement and instructs each student to go to certain commercial laboratories to have the drug screen performed. Many affiliated laboratories have early morning, late evening, and/or weekend hours. The screening is required at a minimum once per year but additional, more frequent screenings may be required by individual sites. The time frame for completion of the drug screen is provided to students in the email and is usually within 72 hours from the time of notification. Instructions for completing the drug screen are found on RxPreceptor by going to "Communications/Support" then "Document Library". The document is titled, "Instructions for Completing a Drug Screen". Students are required to follow the instructions provided by CastleBranch and complete the process within the allotted time frame.

Failure to complete the screening within the allotted time frame may result in an inability to participate in experiential education, including withdrawal from the assigned course/site, and possible disciplinary action. Students are responsible for all fees associated with the screening.

Results of the drug screening are available to students by the vendor (CastleBranch) within a few days after completion. It is the student's responsibility to obtain copies of his/her reports to share with experiential sites upon request. Instruction for obtaining copies of reports may be found on RxPreceptor by going to "Communications/Support" then "Document Library". The document is titled, "Instructions for obtaining a copy of Drug Screening report". Completed reports are also emailed to the Office of Experiential Education by the vendor. Results from a company other than CastleBranch will not be accepted by the College. Practice sites may request that students complete additional and/or more frequent drug screening. It is the responsibility of the student to comply with site policies for drug screening and/or provide practice sites with a copy of the results (if requested). Practice sites reserve the right to require screening by any vendor acceptable to them.

Any undesirable findings from the drug screen will be flagged by CastleBranch and will be reviewed on an individual basis by the members of the Office of Experiential Education and may be shared with the Criminal Background Check and Drug Screening Review Committee, Assistant Dean for Academic and Student Affairs, legal counsel, or other designated individuals. Undesirable findings obtained from drug screening may delay or prevent students from completing introductory and/or advanced pharmacy practice experiences (IPPEs and/or APPEs), continuing in the program, and/or graduating.

Review of Drug Screen Results

Students have the right to review the information reported by the designated vendor for accuracy and completeness and to request that they verify that the drug screening information

provided is correct. All disputes pertaining to the drug screen findings must be communicated in writing directly to the contracted company that conducted the check (Email (for students): servicedesk.cu@castlebranch.com). In addition, the student must inform the Office of Experiential Education by emailing a copy of the complaint statement to BklnOEE@liu.edu and include "Dispute of Drug Screening Results" in the subject line. Reverification will be made if the company determines that reasonable grounds exist. If parts of the report are deleted or changed because of re-verification, the Office of Experiential Education and the student will receive a corrected report.

Results from the drug screen will be reviewed as follows:

- The report submitted to the College by the vendor will be reviewed by members of the Office of Experiential Education.
- If the report shows undesirable finding(s), a representative from the Office of Experiential Education may request that the student submit additional information relating to the findings on the report, such as a written explanation, prescription(s) from a licensed physician, etc.
- Prior to making a final determination that will adversely affect the student, the Office of Experiential Education will inform the student of his or her rights and the procedures regarding how to challenge the accuracy of the drug screening report.
- Results indicated as "Negative Dilute" on the drug screening will require the student to re-test randomly with a 24-hour notice.
- If deemed necessary, The Director of Experiential Education or designee will submit the report and any additional information provided by the student for review by other designated individuals, such as but not limited to, The Criminal Background Check and Drug Screening Review Committee. The Director of Experiential Education or designee will forward this information as soon as possible after the disclosure or discovery of the undesirable finding(s).
- If convened, the Criminal Background Check and Drug Screening Review Committee will review all information provided and provide a formal, written recommendation to the Assistant Dean for Academic and Student Affairs. Recommendations from the Criminal Background Check and Drug Screening Review Committee may include:
 - Allow the student to proceed in the academic program without restriction
 - Allow the student to proceed in the academic program with specified terms and conditions
 - Suspend the student or arrange for a leave of absence to address the issue(s) identified
 - Dismiss the student
- The Assistant Dean for Academic and Student Affairs will review the Committee's recommendation and make a final decision, which will be communicated to the student and the Office of Experiential Education in writing.

• The Assistant Dean for Academic and Student Affairs, with or without the involvement of other designated individuals, may dismiss the student, suspend the student, or require the student to comply with specific terms and conditions for any duration of participation in the program. Notification from the University/College that a student is dismissed, suspended, or otherwise required to comply with set conditions will be done via a letter from the Office of Student and Professional Affairs. A student may appeal that decision in accordance with the University's grievance procedure found in the LIU Pharmacy Bulletin and on the Long Island University website at

<http://www.liu.edu/Brooklyn/Academics/Bulletins/Pharmacy-Bulletin>

College Disclaimer

The LIU Pharmacy Drug Screening process does not guarantee the safety of students, patients, faculty, or staff. In addition, an acceptable drug screen, as defined by the College, state, or experiential site; does not guarantee the student will be eligible to complete the program or obtain a license to practice pharmacy upon graduation.

Fair Credit Reporting Act

If an employer hires an outside individual or firm to conduct a drug screen, the employer is subject to the Fair Credit Reporting Act (FCRA). Although FCRA does not explicitly include educational institutions, the applicability to colleges and schools of pharmacy may depend on legal interpretation and circumstances. A link to an individual's rights under the federal Fair Credit Report Act (FCRA) 15 U.S.C. § 1681 et seq. A copy of the FCRA is available online at <http://www.ftc.gov/bcp/conline/pubs/credit/fcrasummary.pdf>

Public Information Policy

The Family Educational Rights and Privacy Act (FERPA) of 1974 specifically provides that a school may provide what they deem "directory information," without the student's consent or as provided by the law. Directory information at Long Island University includes the following: the student's name, enrollment status, class, major field of study, dates of attendance, degrees and awards received, past and present participation in officially recognized sports and non-curricular activities, physical factors (height, weight) of athletes and the most previous educational agency or institution attended. Students who wish to have their directory information withheld can make this election by filing the appropriate form at Enrollment Services.

Related Curricular Matters

Minors and Double Majors

In addition to having the professional program in pharmacy as a student's major students may wish to have a minor. A minor may consist of at

least 12 credits in courses numbered over 100 in a department or discipline other than LIU Pharmacy. A student must have permission from the Assistant Dean for Academic and Student Affairs to complete a minor. Once a student successfully completes 12 or more credits in courses numbered over 100 for a minor, the Assistant Dean for Academic and Student Affairs will notify Enrollment Services to enter the minor on the student's transcript. Due to the course requirement of the Doctor of Pharmacy program plan, in the vast majority of cases electing to pursue a minor will necessitate additional credits for the completion of the degree.

Students pursuing the Doctor of Pharmacy program need the approval of the Assistant Dean for Academic and Student Affairs to pursue a double major.

Electives

Generally, students are expected to enroll in elective offerings of the Doctor of Pharmacy program of LIU Pharmacy to fulfill the elective requirements for the degree. On occasion, students may be granted permission to take graduate course offerings of LIU Pharmacy and/or course offerings from other colleges and schools of LIU Brooklyn. Students wishing to receive credit for the fulfillment of professional elective requirements for courses outside of those offered as professional electives must seek permission from the Assistant Dean of Academic and Student Affairs in advance of enrolling in such courses. Students are expected to present written statements indicating their reasoning for enrollment in electives other than those offered through the Doctor of Pharmacy degree program.

Repeating Courses

- Students may repeat any course to improve the grade, no matter what the previous grade. To repeat a course more than once, students must have permission from the Assistant Dean for Academic and Student Affairs.
- Any professional course in which a grade of F was earned, must be successfully repeated as soon as the course is offered again (exclusive of summer sessions).
- A course in which a grade of C was earned, may be repeated only if all courses in which a grade of F, D, or C- previously earned have been successfully repeated with a grade of C or better.
- A required course in the professional curriculum may not be repeated more than twice. Failing a required professional course three times is cause for dismissal. Credit will be earned only once, and the second grade, whether higher or lower, will be computed in the student's GPA. After the second time a student takes a course, all grades except the first will be computed in the student's GPA.
- The college is not obligated to offer courses that the student has failed in the academic term immediately following the failure.

Prerequisites

Students are not permitted to register for any professional course unless all science and math and 24 Liberal Arts prerequisites have been successfully completed. Students are responsible for knowing the prerequisites for courses as stated in this bulletin. Students found to be enrolled in a course for which they have not met the prerequisites will be withdrawn from the course regardless of the point in that course where the discovery is made. Students are advised that the lack or the failure of a prerequisite course may significantly impede their academic progress by preventing their enrollment in one or more subsequent courses. Many courses are offered only once a year; hence failure of a course may result in a delay of a year until such course is repeated and the student is authorized to enroll in subsequent courses.

ACADEMIC AWARDS

College Gold Medal

This award is given to the student having the highest general standing in the third, fourth, fifth, and sixth year's work.

College Silver Medal

This award is given to the student having the second-highest general standing in the third, fourth, fifth, and sixth year's work.

College Bronze Medal

This award is given to the student having the third-highest general standing in the third, fourth, fifth, and sixth year's work.

Arnold & Marie Schwartz College of Pharmacy and Health Sciences Professionalism Award

This award is given to a graduating senior who exhibits the ideals of professionalism by exceptional service and commitment to the profession of pharmacy through involvement in professional organizations or other extracurricular opportunities; has assumed a leadership role; and maintained good academic standing.

APhA-ASP Senior Recognition Certificate

The American Pharmacists Association honors a graduating student member who has made the greatest contribution to his or her APhA-ASP chapter with a Senior Recognition Certificate.

Pola and John Bradman Award in Leadership and Service

This award is given to a graduating student who has excelled in service and leadership by playing an active role on behalf of the student body and who has maintained an index of 2.75 or better.

Wolters Kluwer Clinical Drug Information Award of Excellence in Clinical Communication

This award, sponsored by Wolters Kluwer Health, recognizes high academic achievement and outstanding clinical communication skills. The recipient must be in the top 25% of his/her class academically and shall have demonstrated superior verbal and written communication skills. The recipient receives the following: an electronic award certificate, and a 1-year subscription to Lexi-COMPLETE.

Irwin and Lenore Gerson Award

This award is given to a graduating student for qualities of leadership and excellence in pharmacist/patient communication.

Seymour Katz Memorial Award

Sponsored by The Royal Counties Society of Health-System Pharmacists, this award was established in memory of Seymour Katz, FASHP, M.S. '74. The award includes a prize of \$500, a framed certificate, and a one-year membership to the New York State Council of Health-System Pharmacists. This annual honor is awarded to a graduating senior, who is a member of the New York State Council of Health-System Pharmacists and demonstrates a high level of scholarly activity to commemorate the passion of scholarship and research manifested by Seymour Katz. The

applicant must submit an exhibition of research and/or scholarship in the form of a published article or poster presentation. The application must also submit a brief personal statement describing the role of involvement in the project and how the experience has affected the applicant's future as a pharmacist.

Professor Shirley Kraus Research Award

A certificate is awarded to an entry-level Doctor of Pharmacy degree candidate who has conducted a research project under the supervision of a faculty member in the Division of Pharmaceutical Sciences.

Membership in the Pharmacists Society of the State of New York

Membership for five years is awarded to a student who is an active member of student PSSNY, has demonstrated an active interest in the profession, has displayed a capacity for leadership in the profession, and has a record for public service.

Merck Awards

The Merck Awards are presented to outstanding students in pharmacy studies. The award consists of an acrylic representation of the Merck Manual. The first award goes to the student who has attained the highest scholastic standing in Pathophysiology/Immunology; the second award to the student who has attained the highest scholastic standing in Biochemistry; the third award to the student who has attained the highest scholastic standing in Molecular Biology; the fourth award to the student who has attained the highest scholastic standing in Human Genetics; and the fifth award to the student who has attained the highest scholastic standing in Pharmacogenomics.

Viatrix Pharmaceuticals Excellence in Pharmacy Award

This award is presented to a student in the top 25 percent of his/her class academically, who has demonstrated high professional motivation and the intent to enter practice upon graduation. The recipient shall demonstrate high personal motivation and possess a unique ability to communicate drug information. The honoree will receive a certificate acknowledging the award and a custom-framed lithograph entitled "Pharmacy: A Tradition of Healing."

Steven Strauss Pharmacy Law Award

This award is presented to a graduating student who has demonstrated superior academic achievement in pharmacy law courses, who exemplifies the highest principles of moral and ethical conduct, and who has played a leadership role among students.

The United States Public Health Service Excellence In Public Health Pharmacy Practice Award

This award is presented to a student who has shown excellence in educational and community-based programs to advance the goals stated in "Healthy People 2030."

United States Public Health Service Excellence in Interprofessional Education Collaboration

Award

This award is presented to an interprofessional team of health professional students and/or faculty, whose interdisciplinary work (e.g., research, community practice, and/or public health education) has significantly impacted the community they serve. Eight Regional Awards will be conferred. One Overall National Awardee will be selected and presented their award in person at the June IPEC Bi-Annual Meeting Reception in Washington, DC. A webinar series or continuing education publication will be developed from selected project/topic areas.

Demonstrating Excellence in Extemporaneous Pharmaceutical Compounding Award

This award is given to a graduating student who excels in compounding skills and has achieved the best scores in the laboratory. This student is also awarded a gift of \$500.

Stephen M. Gross Faculty Council Award

This award is given to a graduating student based on academic performance and professional motivation.

Arnold & Marie Schwartz College of Pharmacy and Health Sciences Pharmacy Excellence Award

Candidates for this award must display a commitment to patient-centered care, show superior academic achievement and the ability to translate clinical knowledge into practical patient care. Special consideration will be given to a student interested in pursuing postgraduate training/education.

Arnold & Marie Schwartz College of Pharmacy and Health Sciences Excellence in Modular Organ System Therapeutics (MOST) series

This award recognizes a graduating senior with high academic achievement in the MOST course series and who demonstrated outstanding promise in the delivery of patient-centered care.

Arnold & Marie Schwartz College of Pharmacy and Health Sciences Mary M. Lai Community Service Award

This award was established in honor of Mary Lai '42, H'86, Senior Advisor and Trustee Emerita, in recognition of her generosity and responsiveness to the needs of others within and outside of the University community. The award recognizes a graduating student who volunteers his/her time, energy and talents in our college or community, motivates others to get involved, and works with others to make a difference. This student is also awarded a gift of \$250.

Alumni Association Board of Directors Professional Excellence Award

This award will be given to a graduating sixth-year student who has a GPA of 3.0 or higher and exhibits a commitment to volunteerism through a record of service to the College, colleagues, community and profession. This award consists of a gift of \$300.

New Jersey Pharmacists Association (NJPhA) Award

The New Jersey Pharmacists Association presents

a certificate of appreciation to a student who is an active member in the city chapter with plans for staying involved after graduation. Additionally, one free full-year pharmacist membership to NJPhA is provided to the recipient upon graduation.

Fotios Plakogiannis Outstanding Ph.D. Student Award

An award is issued in recognition of a Ph.D. graduate student's scholarly contributions to the field of pharmaceuticals. The award consists of a gift of \$1000.

Graduate Award in Drug Regulatory Affairs

An award is issued in recognition of a graduate student's scholarly contributions to the field of Drug Regulatory Affairs

Graduate Award in Pharmacology and Toxicology

An award is issued in recognition of a graduate student's scholarly contributions to the field of Pharmacology and Toxicology

Graduate Award in Pharmaceuticals

An award is issued in recognition of a graduate student's scholarly contributions to the field of Pharmaceuticals

Demonstrating Excellence in the Shared Credit Program: PharmD/MBA

This award recognizes a graduating student with excellent academic standing in the Doctor of Pharmacy program (Prof GPA 3.5 or above) and who exhibits excellent leadership and entrepreneurial qualities (deemed by the School of Business).

REGISTRATION

Registration and Advisement

Students may register either online or in person. Students should routinely and closely monitor notifications while they are logged into MyLIU.edu regarding online appointment dates and times for self-service registration for upcoming academic terms. Students desiring to register in person should make appointments with academic advisors in the college's Office of Student and Professional Affairs during the registration periods specified in the published academic calendars.

Academic advisors are available during normal business hours to assist students with issues regarding class selection and scheduling as well as academic progress. Advisors also provide guidance to students in matters regarding academic probation.

Withdrawal

Official Withdrawal from Courses

An official withdrawal refers to an action taken by a student to discontinue enrollment after the drop period has expired. The course is recorded on the transcript with a grade of W.

- **Course Withdrawals/Partial Withdrawals** - when a student withdraws from one or more classes but remains enrolled in at least one class.
- **Term/Session Withdrawals/Complete Withdrawals** - when a student drops or withdraws from all of his/her courses in a current term. This can occur at one time or over a period of time within a term.

Unofficial Withdrawal

An unofficial withdrawal refers to a student who fails to attend or ceases to attend before the withdrawal deadline without officially withdrawing from the university. The course is recorded on the student's transcript with a grade of UW.

Course Drop

A Course Drop is an action taken by a student prior to or during the start of the term to remove a course from his/her transcript. Students may drop one, some or all of their classes through the drop/add period without receiving any grade. However, students who fail to drop a course or wish to withdraw from a course after the designated drop/add period for a term but before the designated withdrawal deadline must follow the Official Withdrawal procedures. See Withdrawal Policy for details on Withdrawals.

Students can drop full-semester classes up through the second week of the term with no penalty as follows:

- Drop one or more courses online using their MyLIU portal

- Drop courses at the Office of Enrollment Services
- Drop courses through their Academic Advisor
The drop period for classes that meet for less than the full semester is as follows:
- Sessions meeting 7 or more weeks: courses can be dropped up through the first week
- Sessions meeting 3 to 6 weeks: courses can be dropped up through the 2nd day of the session
- Sessions meeting 2 weeks or less: courses can be dropped up through the 1st day of the session

Students may have their financial aid reduced if the student's enrollment status changes from full-time to part-time, or from full-time or part-time to below half-time. Students will have their financial aid canceled if the student drops all courses and does not incur any liability, or fails to meet satisfactory academic progress standards as a result of the cancellation of enrollment. Financial aid for future terms will also be canceled. See Appeals Policy for Student Withdrawals and Satisfactory Academic Progress Policy for additional details. Students receiving Veterans benefits should meet with the Veteran's Certifying Official to determine if drops will affect their current and future benefits when they; add or drop any course, withdraw from or terminate enrollment at the University.

Drops that change a student's enrollment status from full-time to part-time, or from full or part-time to below half-time, may have their Federal, State, and/or University aid adjusted. The University may also be required to report the student's change in enrollment status to lenders, which can trigger the repayment of student loans. Students will be notified in these cases via writing.

Drops after the drop/add period must be processed as a partial or full withdrawal.

Official Withdrawal Deadlines

- **Withdrawal from full-semester courses** - Students may officially withdraw from one or more courses through the 10th week of the term for full-term courses during the fall and spring semesters.
- **Withdrawal from Summer Session courses or courses meeting for shorter sessions within the regular fall/spring semesters** - Students may officially withdraw according to the schedule below:
 - 12 week sessions – withdrawals permitted through the 8th week
 - 10 week sessions – withdrawals permitted through the 7th week
 - 7 week sessions – withdrawals permitted through the 5th week
 - 6 week sessions – withdrawals permitted through the 4th week
 - 5 week sessions – withdrawals permitted through the 3rd week
 - 2 week sessions – withdrawals permitted through the 7th day
 - 1 week sessions – withdrawals permitted through the 3rd day

Withdrawal Methods

The University permits students to withdraw from a course, session, or term in the following manner:

- **Process through MyLIU** - Students should use their MyLIU portal to withdraw from courses online until the withdrawal deadlines as detailed in the "Official Withdrawal Deadlines" section above.
- **Submit Completed Withdrawal Application Form** - Students who are unable to withdraw online must submit a signed and completed Withdrawal Application Form to the Office of Enrollment Services by the withdrawal deadline.

Withdrawal Impacts

Effective Date of Withdrawal

The withdrawal date for a student who withdraws is the earlier date of:

- The date the student began the withdrawal process; or
- The date the student otherwise provided the University with official notification of the intent to withdraw; or
- The date the institution becomes aware the student ceased attendance; or
- The midpoint of the payment period or period of enrollment for which Title IV assistance was disbursed if the student ceases to attend without official notification and withdrawal.

Tuition Liability and Refund Policy

- **Official Withdrawals and Drops:** The effective date of drops and/or withdrawal will determine the student tuition liability due or refund due to the student. wish to appeal tuition charges and fees due.
- **Unofficial Withdrawals:** The student is responsible for all associated tuition charges and fees.

Transcript/Grades

- **Official Withdrawals:** A grade of W will be assigned for the course or courses and will appear on the student's transcript.
- **Unofficial Withdrawals:** A grade of UW will be assigned for the course or courses and will appear on the student's transcript.
- **Drops:** The course will not appear on, or will be removed from the student's transcript.

Credits Attempted/Earned

- **Official Withdrawals:** The course or courses will be considered attempted but not earned.
- **Unofficial Withdrawals:** The course or courses will be considered attempted but not earned.
- **Drops:** The course or courses will neither be considered attempted nor earned.

Grade Point Average

Withdrawn or dropped courses do not affect a student's grade point average.

Financial Aid Adjustments

- **Change in Student Status:** Students who change their enrollment status from full-time to part-time, or from full or part-time to below half-time, due to a partial drop or withdrawal, may have their federal, state, and/or university

aid adjusted. The university may also be required to report the student's change in enrollment status to lenders, which can trigger the repayment of student loans. Students will be notified in these cases via writing.

- **Cancellation of Financial Aid:** Students will have their financial aid canceled if the student drops all courses and does not incur any liability, or fails to meet satisfactory academic progress standards as a result of the withdrawal. Financial aid for future terms may also be canceled. See Appeals Policy and SAP Policy for additional details.
- **Return of Federal Funds:** The university is required to return funds for students who stop attending all courses before completing 60% of the term. The student will be notified by mail of the unearned amounts returned to the federal financial aid programs. The return of federal funds may result in a balance due to the university, particularly if the student previously received and cashed a refund check. See Return of Federal Funds Policy for additional details.

Residential Life

Students residing in on-campus housing must contact the Office of Residence Life upon withdrawal from the university. Students must follow proper check-out procedures and must vacate their campus housing within 48 hours of the effective withdrawal date. Students who drop or withdraw from a future term must vacate their campus housing after completion of finals. Room and board charges must be canceled through the Office of Residence Life. Liability for these charges will be assessed at the time of cancellation.

Future Enrollment

Students who withdraw from all courses may be subject to readmission. Students who withdraw from the university must be in good financial standing in order to register for future classes or have access to their official and unofficial transcript.

Special Program Participation

- **Athletics:** In accordance with NCAA regulations, all intercollegiate athletes must notify the Athletic Department and Office of Admissions when partially or fully withdrawing from the university.
- **Veterans:** In accordance with VA regulations, students receiving veteran's benefits must notify the VA Certifying Official in the Office of Enrollment Services when partially or fully withdrawing from the university.

Alternatives to Withdrawal

Schedule adjustments

When contemplating a withdrawal due to scheduling conflicts, students should discuss their situation with their academic advisor, academic dean, or the Office of Enrollment Services to see if accommodations can be made.

Incomplete Grades

For some students, receiving an incomplete grade and finishing the coursework at a later time

may be a better option than withdrawing from the university. Students should be advised to discuss this option with their instructor, academic advisor or academic dean.

Refund of Tuition in Cases of Withdrawal

When a student withdraws from courses, the university refunds tuition as outlined in the Withdrawal Policy (please see the Tuition and Fee Schedule).

Student Withdrawal Appeals

Students may appeal for late drops, late withdrawals, and tuition and fee refunds/credits after the University's published deadlines. Students are required to complete and sign the Appeal for Student Withdrawal Form, which also requires submission of a written statement supporting the appeal request, desired outcome, and justification for any extraordinary circumstances that occurred. In addition, supporting documentation must also be attached, including official proof of attending another institution (schedules, unofficial transcripts, or emails will not be accepted), official proof of a hospital stay of two or more weeks accompanied by a signed doctor's note, death certificate or official divorce decree, or other documentation supporting the requested appeal.

Appeals are processed based on the date the form is received. Students must submit the form no later than 30 days following the end of the appealed term(s) for consideration. Students are required to certify that all data and documents submitted are true and factual. The University has the right to deny any appeal, which may result in the student receiving grades, incompletes, or withdrawals, being liable for outstanding charges, and/or responsibility for loans taken during the appealed term(s). Approved appeals may result in a change to the student's academic record and financial aid being returned, reduced, or canceled. Once an appeal has been evaluated and a decision reached, it will not be reconsidered.

Auditing of Courses

Auditing of courses (without credit) is allowed only with the permission of the Assistant Dean for Academic and Student Affairs. The audit fee is set at one-half the regular tuition fee, plus the full application fee for new students. On behalf of special programs of instruction, the Assistant Dean for Academic and Student Affairs may authorize exceptions to the rules for auditing.

Transcript Requests

Official transcripts for professional and graduate schools, prospective employers and other institutions must be requested in writing. Please note: if you owe the university any funds or have certain blocks on your account, your request cannot be processed. The university adheres to the Family Education Rights and Privacy Act of 1974. A student's record will not be released without

prior written consent from the student. Enrolled students may use the secure student portal (My LIU) (<https://my.liu.edu>) to check their financial and academic status. Students have the following options to secure transcripts.

Option 1:

Currently Enrolled Students - Login to the My LIU portal and select "Order Transcripts Online." Cost: \$15.00 per transcript.

Option 2:

Alumni or Students Not Currently Enrolled - Order transcripts online through Parchment at www.parchment.com. You can submit a transcript request 24 hours/day, 7 days/week. Be assured that Parchment uses current web encryption technology and your information is secure. Cost: \$15.00 per transcript.

Option 3:

In-Person "On Demand" transcripts- You may come to the campus Enrollment Services Office, show picture ID, and official transcripts can be printed for you on the spot. Please call 718-488-1037 for office hours. Cost: \$25.00 per transcript

If you wish to release your transcripts to a third party for pick up, you must provide signature authorization for that request. The third party will be required to show a photo id.

Essential information to be furnished should include:

- Full name, address, student ID number or social security number, dates of attendance
- Name while enrolled, if different from above.
- Complete name and address (written clearly) of the recipient including institution, department name, address, city, state and zip code.

Many transcripts do not reach their proper destination in time because incomplete and inaccurate information is included in the original request. Please be sure to provide accurate addressee information when requesting official transcripts.

Except during peak periods at the conclusion of each semester, requests are usually processed within five business days. If the transcript is to be held for the completion of any courses in progress, processing will occur within 10 days after the grades are posted.

For more information, visit the LIU Post Enrollment Services' website at:

<http://liu.edu/Brooklyn/Enrollment-Services/Registration/Transcript-Orders>

Administrative Matters

Cancellation of Courses

LIU Pharmacy reserves the right to cancel undersubscribed courses. When it does so, there is no program change fee.

Change of Address or Telephone Number

All professional students must report changes of address, telephone number, and/or email address to LIU Brooklyn Enrollment Services and

to the LIU Pharmacy Office of Student and Professional Affairs.

Academic Records

Students have until the time of their graduation to have changes made on their academic records. Once a student has graduated, the academic record is frozen and cannot be changed retroactively.

Failure to Fulfill Nonacademic Requirements

Students failing to fulfill all non-academic requirements (tuition, fees, library obligations, etc.) will be denied subsequent services, including, but not limited to, withholding of diplomas, transcripts, letters of recommendation or licensure eligibility until those requirements are met.

GRADUATE PROGRAMS

LIU Pharmacy offers graduate curricula leading to the Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences (with specialization in pharmaceuticals or pharmacology/toxicology), Master of Science (M.S.) in Pharmaceutics (with specialization in industrial pharmacy or cosmetic science), M.S. in Pharmacology and Toxicology, and M.S. in Drug Regulatory Affairs.

GRADUATE CURRICULUM

Christopher Surratt, B.A., Ph.D.

Associate Dean for Research and Graduate Programs

Division of Pharmaceutical Sciences

All graduate programs are offered through LIU Pharmacy's Division of Pharmaceutical Sciences.

Interim Chair

Anthony Cutie, Ph.D.

Telephone: 718-488-1626

Doctor of Philosophy in Pharmaceutics

Program Directors

Pharmaceutics Track:

David Taft, Ph.D.

Telephone: 718-488-1263

Pharmacology/Toxicology Track:

Kenza Benzeroual, Ph.D.

Telephone: 718-488-1062

Program Description

Students develop an ability to conduct independent research and are much sought-after in industry and academia. Graduates with a Ph.D., depending on their specialization, might go into industry or accept a position as a post-doc in various institutions across the country. Students may pursue work in the following:

- Formulation and Analytical Science
- Pharmacokinetics
- Contract Manufacturing
- Pharmacology
- Toxicology
- Post-Doc and Academics

Program Mission

The Ph.D. in Pharmaceutical Sciences at Long Island University is designed to prepare students to meet the challenges and the current needs of scientists engaged in the pharmaceutical sciences and drug development process. The program offers a blend of didactic and laboratory courses in biopharmaceutics/pharmacokinetics, pharmacology/toxicology and pharmacogenomics, and other areas related to academic and industrial research. After completing a broad-based core of fundamental courses, all students are required to perform original research in a specialized area, culminating in a dissertation. The program is designed so Ph.D. students have considerable flexibility in selecting areas of research for the Ph.D. project. The program is developed to help students obtain skills in experimental design, research methodology, and scientific communication in preparation for research

opportunities in academia, government laboratories, and the pharmaceutical industry.

The Ph.D. in Pharmaceutical Sciences requires students to complete 69 credits of coursework, choosing one of two specialization tracks: Pharmaceutics or Pharmacology/Toxicology. This includes 36 credits of coursework in the M.S. Program in Pharmaceutics or the M.S. Program in Pharmacology/Toxicology. Admission to the Ph.D. The program requires successful completion of the M.S. phase of the LIU program or completion of a non-LIU M.S. in which the same course material is covered. Students may bypass the M.S. degree and continue toward the Ph.D. degree, but only after completing M.S.-level coursework and passing the Ph.D. Qualifying Exam.

Program Goals and Objectives

Goal 1: Design, conduct and defend original research in one's field of expertise.

1.1 Integrate advanced knowledge and concepts in pharmaceutical sciences to identify a research problem and to develop an appropriate hypothesis and design experiments to study the problem.

1.2 Demonstrate technical skills involving computer, laboratory, and other measurements necessary to be a productive scientist.

1.3 Analyze experimental data and compare results to theoretical predictions.

1.4 Effectively disseminate and defend one's research both orally and in writing.

Goal 2: Apply analytical and critical thinking in reviewing scientific literature and evaluating research findings.

2.1 Read, accurately interpret, and critically analyze procedures (including error identification), results and conclusions from discipline-specific published research.

2.2 Identify potential errors in and limitations of key research studies related to one's research focus, including studies conducted by the student.

REQUIREMENTS FOR THE PH.D. DEGREE

[Program Code: 93195] {HEGIS: 1211}

Students will choose from two Ph.D. Pharmaceutical Sciences tracks: Pharmaceutics or Pharmacology/Toxicology. Students must complete a minimum of 69 credits of coursework, including 36 credits of M.S.-level work foundational to the track's specialty, four semesters of PHS 998 (Ph.D. Research and Thesis), submit a satisfactory dissertation proposal, submit a satisfactory written dissertation, and successfully defend (orally) the dissertation.

A written comprehensive examination is required after completing the core (required) courses listed in the M.S.-level course load of the

selected track. Students must successfully pass this examination to qualify for continuation in the Ph.D. program. Below are listed the remaining core classes after the M.S.-level course load and successful completion of the comprehensive examination.

Ph.D. Pharmaceutical Sciences: Pharmaceutics Track

Required Courses (24 credits)

PHS	936	Dosage Form Design	3.00
PHS	997	Solid State Characterization	3.00
PHS	998	Research and Thesis (4 semesters)	12.00
PTM	712	Scientific Writing	3.00
PTM	923	Advanced Medicinal Chemistry	3.00

Elective Courses (9 credits)

Students select three (3) electives from the list of graduate electives

Ph.D. Pharmaceutical Sciences: Pharmacology/Toxicology Track

Required Courses (24 credits)

PHS	936	Dosage Form Design	3.00
PHS	998	Research and Thesis (4 semesters)	12.00
PTM	712	Scientific Writing	3.00
PTM	923	Advanced Medicinal Chemistry	3.00
PTM	924	Clinical Pharmacology and Toxicology	3.00

Elective Courses (9 credits)

Students select three (3) electives from the list of graduate electives

Students in all graduate programs may choose from the elective courses listed below - program advisor approval may be required. Additional courses may be substituted for elective credit upon the approval of the program advisor.

With the approval of the program advisor, students choose elective courses from the list below. A course may not be offered for a given semester unless the minimum enrollment requirement is met. Additional courses may be substituted for elective credit upon faculty approval.

CHM	581	Computational Chemistry	3.00
CHM	606	Advanced Physical Chemistry	3.00
PHS	070	Special Problems	3.00
PHS	769	Transdermal Drug Delivery	3.00
PHS	880	Thermal Physics and Applications to the Chemistry of Pharmaceutical Systems I	3.00
PHS	881	Thermal Physics and Applications to the Chemistry of Pharmaceutical Systems II	3.00

PHS	886	Computational Methods of Data Analysis	3.00	PHA	615	Consumer Behavior and Contemporary Healthcare Issues	3.00	PTM	070	Special Projects	3.00
PHS	887	Pharmacokinetic/Pharmacodynamic Modeling and Simulation	3.00	PHA	617	Pharmaceutical Laws and Enforcement	3.00	PTM	704	Autonomic Pharmacology	3.00
PHS	937	Pharmaceutical Engineering	3.00	PHA	618	Patent Law and the Pharmaceutical Industry	3.00	PTM	705	Biochemical Pharmacology	3.00
PHS	950	Cosmetic/Dermatological Formulations and Technology I	3.00	PHA	645	Internship in Drug Regulatory Affairs	3.00	PTM	708	Cardiovascular Pharmacology	3.00
PHS	951	Cosmetic/Dermatological Formulations and Technology II	3.00	PHA	651	Pharmaceutical Labeling, Advertising, and Promotion	3.00	PTM	709	Advanced Pharmacology	3.00
PHS	955	Integrated Dosage Form Development	3.00	PHA	653	Seminar in Social and Administrative Sciences	3.00	PTM	711	Current Technologies in Pharmaceutical Research and Development	3.00
PHS	958	Aerosol Science and Technology	3.00	PHA	654	FDA Regulation of Over-the-Counter Drugs, Medical Devices, and Dietary Supplements	3.00	PTM	712	Scientific Writing	3.00
PHS	960	Properties/Applications of Cosmetic and Pharmaceutical Raw Materials	3.00	PHA	655	Chemistry, Manufacturing, and Controls (CMC) Regulatory Affairs	3.00	PTM	743	Human Carcinogenesis	3.00
PHS	975	Physiologically Based Pharmacokinetic Modeling and Simulation—Theory and Application	3.00	PHA	657	Principles and Practices of Regulatory Compliance and Enforcement	3.00	PTM	802	Experimental Methods in Pharmacology and Toxicology	3.00
PHS	976	Drug Metabolism and Disposition	3.00	PHA	658	International Drug Regulatory Affairs	3.00	PTM	804	Inborn Errors of Metabolism	3.00
PHS	979	Design of Peptide and Protein Drug Delivery Systems	3.00	PHA	660	Mechanics of Preparing INDs and NDAs	3.00	PTM	905	Principles of Immunotherapy	3.00
PHS	982	Science and Technology of Controlled Release Systems	3.00	PHA	661	The American Pharmaceutical Industry	3.00	PTM	907	Psychopharmacology	3.00
PHS	988	Oral Absorption and Drug Development	3.00	PHA	665	Healthcare Data Management and Analysis	3.00	PTM	910	Toxicology of Drugs and Chemicals	3.00
PHS	989	Special Topics in Pharmaceutics	3.00	PHS	060	Research and Thesis	3.00	PTM	917	Molecular Toxicology	3.00
PHS	991	Solubility and Complex Equilibria	3.00	PHS	601	Pharmaceutical Calculus	3.00	PHM	920	Molecular Pharmacology	3.00
PHS	992	Transport Phenomena and Drug Delivery I	3.00	PHS	602	Pharmaceutical Regulatory Overview	3.00	PTM	921	Medicinal Chemistry and Drug Design	3.00
PHS	993	Kinetics and Mechanisms of Drug Degradation	3.00	PHS	702	Physical Chemistry II	3.00	PTM	923	Advanced Medicinal Chemistry	3.00
PHS	995	Transport Phenomena and Drug Delivery II	3.00	PHS	931	Advanced Physical Pharmacy I	3.00	PTM	924	Clinical Pharmacology and Toxicology	3.00
PHS	996	Interfacial Phenomena	3.00	PHS	932	Advanced Physical Pharmacy II	3.00	PTM	925	Pharmacogenomics	3.00
CHE	621	Advanced Organic Chemistry I	3.00	PHS	934	Principles of Industrial Pharmacy I	3.00	PTM	938	Stem Cells and Regenerative Medicine	3.00
MTH	610	Differential Equations I	3.00	PHS	935	Principles of Industrial Pharmacy II	3.00				
PHA	010	Biostatistics	3.00	PHS	936	Dosage Form Design	3.00				
PHA	050	Research Methodology	3.00	PHS	952	Cosmetic/Dermatological Formulations and Technology Laboratory	3.00				
PHA	060	Research and Thesis	3.00	PHS	972	Methods of Pharmaceutical Analysis	3.00				
PHA	070	Special Problems	3.00	PHS	983	Polymer Science	3.00				
PHA	601	Marketing Research and Analysis	3.00	PHS	987	Advanced Biopharmaceutics and Pharmacokinetics	3.00				
PHA	603	Drug Regulatory Affairs	3.00	PHS	990	Pharmacokinetic Modeling	3.00				
PHA	604	Pharmacoeconomics	3.00	PHS	997	Solid State Characterization	3.00				
PHA	606	Sales Management	3.00	PTM	060	Research and Thesis	3.00				

Master of Science in Pharmaceutics

Program Directors

Industrial Pharmacy Track:

David Taft, Ph.D.

Telephone: 718-488-1263

Cosmetic Science Track:

David Taft, Ph.D.

Telephone: 718-488-1263

Program Description

Graduates from this program are in great demand and fill vital positions in various pharmaceutical and cosmetic industries. They are sought after by pharmaceutical and cosmetic companies, contract research organizations, OTC companies and various analytical labs. Their strong background makes them ideal candidates to fulfill the growing demands in these industries.

Employment fields include the following:

- Formulation
- Pharmacokinetics
- Manufacturing
- Analytical
- Quality Assurance
- Quality Control

Students will choose from two M.S. Pharmaceutics tracks: Industrial Pharmacy or Cosmetic Science.

Specialization in Industrial Pharmacy

Program Mission

The mission of the Master of Science in Pharmaceutics with specialization in Industrial Pharmacy is to uniquely prepare students for entry into the pharmaceutical industry and for entry to the Ph.D. programs in pharmaceutical sciences and other related fields. Graduates of the program will be highly sought after by the global pharmaceutical industry to support research, development and manufacturing operations. Alumni should become positioned to assume leadership roles within the pharmaceutical industry as well as within academia, further elevating the stature of the Division of Pharmaceutical Sciences, LIU Pharmacy and of the university as a whole.

Program Goals and Objectives

Goal 1: Demonstrate acquisition of knowledge of fundamental concepts in pharmaceutics/industrial pharmacy.

1.1 List and explain physical and chemical properties of solvents and solutes that affect solubility, stability, and other biopharmaceutic properties/behaviors used in the development of dosage forms.

1.2 Describe the important factors necessary for the design, manufacture and evaluation of various dosage forms and other drug delivery systems.

1.3 Develop, validate and apply different instrumental analytical techniques toward the analysis of drug substances in various dosage forms.

1.4 Identify and explain the principles that govern absorption, distribution, metabolism and excretion of drug substances, and the factors that influence these processes.

Goal 2: Integrate advanced knowledge and concepts in pharmaceutical sciences.

2.1 Demonstrate the ability to interpret and analyze data.

2.2 Design, manufacture and evaluate dosage forms and other drug delivery systems.

2.3 Characterize and evaluate the physicochemical properties of pharmaceutical materials.

Goal 3: Effectively communicate scientific information both orally and in writing to inform and educate professional and scientific peers.

3.1 Retrieve, analyze, and interpret the scientific literature to provide information for dissemination orally or in writing.

3.2 Verbally deliver information in an organized, persuasive and logical manner using supportive documentation and visual aids.

3.3 Create documents that are technical, analytical, relevant in content and well organized.

Goal 4: Develop group dynamic and teamwork abilities.

4.1 Demonstrate one's personal contributions to group projects or assignments.

4.2 Summarize information gleaned from group experiences and communicate findings.

Specialization in Cosmetic Science

Program Mission

The mission of the Master of Science in Pharmaceutics with specialization in Cosmetic Science is to uniquely prepare students for entry into the cosmetics industry and other related fields. Graduates of the program will be highly sought after by the global cosmetics industry to support research, development and manufacturing operations in the areas of chemistry, cosmetic/dermatological formulations technology, product evaluations and safety. Alumni should become positioned to assume leadership roles within the cosmetics industry.

Program Goals and Objectives

Goal 1: Develop the expertise and skills necessary for the design, manufacture and evaluation of various cosmetic and dermatological products.

1.1 Perform calculations necessary to scale-up a dermatological formulation;

1.2 List the challenges involved in formulation and preparation of dermatological products;

1.3 Design set of experiments necessary to develop a dermatological product;

1.4 Evaluate final dermatological product based on in-vitro experiments;

1.5 Identify tests necessary to conduct in-vitro testing of dermatological products.

Goal 2: Demonstrate ability to develop, validate and apply different instrumental analytical techniques to analyze various cosmetic and dermatological products.

2.1 Describe how to validate analytical methods;

2.2 Be able to select appropriate column for HPLC analysis;

2.3 Perform calculations necessary to determine the concentration of an analyte in given sample;

2.4 Select the appropriate method for quantitative measurement of analyte concentration.

Goal 3: Use physical chemical principles involved in development of dermatological dosage forms.

3.1 Identify appropriate ingredients to formulate a cosmetic dosage form;

3.2 Demonstrate the ability to conduct stability testing of different dermatological formulations;

3.3 Apply physicochemical principles to develop dermatological products;

3.4 Utilize rheological parameters for packaging of dermatological formulations;

3.5 Understand principles underlying behavior of various types of surfactants;

3.6 Understand properties of preservatives and their application.

Goal 4: Develop the oral and written communication skills necessary to inform and educate professional and scientific peers.

4.1 Demonstrate the ability to write scientific documents;

4.2 Demonstrate ability to present scientific findings orally.

M.S. Pharmaceutics - Requirements

[Program Code: 77047] {HEGIS: 1211}

Requirements for the Industrial Pharmacy track:

Students taking the Non-Thesis Option must complete 36 credits of coursework and pass the written comprehensive examination. Students taking the Thesis Option must complete 36 credits of coursework of which 6 credits are for PHS 080 Research and Thesis, pass the written comprehensive examination, submit a satisfactory thesis proposal, submit a satisfactory written thesis, and successfully defend (orally) their written thesis.

The following courses are required for the Industrial Pharmacy track:

PHS	602	Pharmaceutical Regulatory Overview	3.00
PHS	931	Advanced Physical Pharmacy I	3.00
PHS	932	Advanced Physical Pharmacy II	3.00
PHS	934	Principles of Industrial Pharmacy I	3.00
PHS	935	Principles of Industrial Pharmacy II	3.00
PHS	601	Pharmaceutical Calculus	3.00
PHS	972	Methods of Pharmaceutical Analysis	3.00
PHS	987	Advanced Biopharmaceutics/Pharmacokinetics	3.00
PHA	010	Biostatistics	3.00

Students selecting the Thesis Option must register for the following course:

PHS	80	Research And Thesis	6.00
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Additional electives are listed under the

description of the Ph.D. program.

Requirements for the Cosmetic Science track:

Students taking the Non-Thesis Option must complete 33 credits of coursework and pass the written comprehensive examination. Students taking the Thesis Option must complete 33 credits of coursework of which 6 credits are for PHS 060 Research and Thesis, submit a satisfactory thesis proposal, submit a satisfactory written thesis, and successfully defend (orally) their written thesis.

The following courses are required for the Cosmetic Science track:

PHA	010	Biostatistics	3.00
PHS	950	Cosmetic/Dermatological Formulations and Technology I	3.00
PHS	951	Cosmetic/Dermatological Formulations and Technology II	3.00
PHS	952	Cosmetic/Dermatological Formulations and Technology Laboratory	3.00
PHS	960	Properties/Applications of Cosmetic and Pharmaceutical Raw Materials	3.00
PHS	602	Pharmaceutical Regulatory Overview	3.00
PHS	761	Quality-by-Design and Process Validation	3.00
PHS	760	Dermal and Transdermal Drug Products: Development and Regulation	3.00
PHS	953	Color In Cosmetic Delivery Systems	3.00

Students selecting the Thesis Option must register for the following course in two consecutive semesters:

PHS	060	Research And Thesis	3.00
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Additional electives are listed under the description of the Ph.D. program.

Master of Science in Pharmacology / Toxicology

Master of Science in Pharmacology and Toxicology

Program Director

Kenza Benzeroual, Ph.D.

Telephone: 718-488-1062

Program Description

Career opportunities and employment may include academic departments involved in research, development, and teaching. Rewarding careers are also possible in pharmaceutical companies, government laboratories and agencies

including the Centers for Disease Control, The Food and Drug Administration, the Department of Agriculture, and the Department of Defense.

Opportunities also exist in areas involving the development of public policy, investment advising, patent law, and scientific writing and editing.

There is excellent potential for rapid advancement in this field due to the importance of the discipline to the drug industry, regulatory agencies, and the general public.

Graduates of the program have either joined academic departments by securing doctoral fellowships in prestigious laboratories or obtained jobs in the industry. Others have used their degree to facilitate entry into medical and pharmacy schools.

Employment opportunities may include:

- Designing and performing laboratory experiments
- Managing research projects
- Reviewing scientific documents and making recommendations
- Writing scientific communications and papers for publication and non-publication purposes
- Oral communication of scientific findings

In addition to strong scientific background and analytical skills, the successful candidate will also need to possess excellent interpersonal and communication skills and high ethical standards.

Program Mission

LIU Pharmacy's M.S. in Pharmacology and Toxicology degree program prepares student lifelong learners with the knowledge and abilities required for competitive technical positions in pharmacological research and testing, for participating in clinical trials, and for performing toxicological reviews and assessments in the pharmaceutical and biotechnology industries as well as in academic and governmental research laboratories. Additionally, graduates are well-positioned to continue their studies in Ph.D. programs in pharmacology and other biomedical sciences, while other graduates may find the program ideal for improving their credentials toward gaining admission to medical school or other health professional programs.

Students will: a) demonstrate a mastery of a broad didactic foundation in pharmacology and toxicology; b) develop research skills through exposure to significant research opportunities and experiences during which they translate their knowledge base into practice; and c) utilize professional skills such as statistical analysis, written and verbal communication. These abilities will be acquired through specific coursework, labs, seminars, and other professional and personal development offered during the course of study.

Program Goals and Outcomes

At the end of the program students will:

Goal 1: Apply the knowledge of mechanisms of action of drugs and toxicants to discuss the clinical profile of pharmacological agents.

- 1.1. Discuss the mechanisms of action of selected drugs/toxicants at the molecular, cellular, organ system, and whole-body level;
- 1.2. Discuss the toxicity of drugs based on the physiology and the pathophysiology of the disease;
- 1.3. Assess and evaluate therapeutic and/or toxic outcomes based on the knowledge of drugs/toxicants' accessibility to target sites.

Goal 2: Apply the knowledge of pharmacokinetic and pharmacodynamic processes and principles to discuss therapeutic and toxic outcomes of pharmacological agents.

- 2.1. Apply the pharmacokinetic processes to discuss the absorption, distribution, metabolism, and excretion of drugs/toxicants;
- 2.2. Apply the pharmacodynamic principles to discuss a drug's affinity, potency, and efficacy;
- 2.3. Evaluate the impact of pharmacokinetic processes on the action of drugs/toxicants and their clinical/toxic outcomes;
- 2.4. Use the pharmacodynamic principles to discuss the mechanism of action of drugs/toxicants and clinical/toxic outcomes;
- 2.5. Use appropriate concepts, principles, and analysis skills to address drug efficacy/toxicity queries;
- 2.6. Discuss the clinical uses and the safety profile of various classes of drugs;
- 2.7. Solicit appropriate information required to address drug efficacy/toxicity queries.

Goal 3: Develop oral and written communication skills necessary to disseminate scientific information.

- 3.1. Orally communicate sound evaluations of discipline-specific, peer-reviewed papers;
- 3.2. Demonstrate verbal communication skills during seminar presentations and the thesis defense;
- 3.3. Demonstrate the ability to write scientific reports and evaluations in the area of study;
- 3.4. Develop proficiency in writing abstracts;
- 3.5. Demonstrate the ability to write a research project;
- 3.6. Write a thesis dissertation based on data obtained during laboratory training and investigation.

Goal 4: Retrieve, analyze, interpret, and critique scientific literature in pharmacology and toxicology.

4.1. Conduct a literature review independently using appropriate keywords, databases, and select pharmacology and toxicology peer-reviewed papers that pertain to a specific problem;

4.2. Analyze, interpret, and critique the scientific literature with regard to study design, data interpretation, and appropriateness of conclusions.

Goal 5: Develop the skills needed to perform analytical and experimental techniques, and research methodology.

5.1. Develop an experimental technique based on one's own research area;

5.2. Design experiments using pharmacological and toxicological tools to investigate a specific research area;

5.3. Develop and validate research methodologies to investigate specific research questions.

Goal 6: Identify research opportunities, develop hypotheses and design research projects, and execute independent research. (Thesis option students).

6.1. Demonstrate the ability to carry out experiments in a laboratory setting;

6.2. Demonstrate the ability to design experimental protocols;

6.3. Statistically analyze and generate graphics of the data and interpret experimental findings;

6.4. Demonstrate the ability to conduct a literature search for a specific area of investigation;

6.5. Identify areas of unsolved investigation; develop hypotheses and research questions.

Undergraduate Prerequisites:

Biochemistry, Physiology and Pharmacology

M.S. in Pharmacology/Toxicology - Requirements

[Program Code: 26233] {HEGIS: 0414}

Students taking the Non-Thesis Option must complete 36 credits of coursework and pass the written comprehensive examination. Students taking the Thesis Option must complete 36 credits of coursework of which 6 credits are PTM 060 Research and Thesis, submit a satisfactory thesis proposal, submit a satisfactory written thesis, and successfully defend (orally) their written thesis.

Courses required for the M.S. in Pharmacology/Toxicology degree

PHA	010	Biostatistics	3.00
PTM	020	Seminar In Pharmacology/Toxicology	3.00
PTM	704	Autonomic Pharmacology	3.00
PTM	705	Biochemical Pharmacology	3.00
PTM	709	Advanced Pharmacology	3.00

PTM	802	Experimental Methods in Pharmacology and Toxicology	3.00
PTM	910	Toxicology of Drugs and Chemicals	3.00
PTM	925	Pharmacogenomics	3.00

Students selecting the thesis option must register for the following course in *two consecutive semesters*:

PHS	060	Research and Thesis	3.00
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Additional electives are listed under the description of the Ph.D. program.

Master of Science in Drug Regulatory Affairs

Program Director

John Lonie, Ed.D., R.Ph.
Telephone: 718-488-1259

Program Description

With pressure to contain the cost and time it takes to create new products and bring them to market, professionals with expertise in regulatory affairs are highly sought after by pharmaceutical companies and medical device manufacturers, as well as by hospitals, health maintenance organizations (HMOs) and a range of other healthcare-oriented organizations as well. The expertise of a DRA professional may be used in areas such as clinical trials, manufacturing, compliance, patenting, sales and marketing, IT, finance and scientific writing.

Employment opportunities include:

- Collecting data and preparing submissions to regulatory agencies
- Assisting in the development of procedures to ensure regulatory compliance
- Interfacing with regulatory agencies
- Facilitating identification and resolution of scientific and regulatory issues with regulatory agencies
- Remaining current with federal and international regulations and communicating that information within the organization, including the creation of training materials
- Participating in the development of new products and services
- Participating in quality audits

In addition to a strong background in pharmaceutical science and regulatory affairs, a successful DRA professional should have excellent interpersonal and communication skills, high ethical standards, attention to detail and strong organizational skills.

Program Mission

The mission of the Master of Science program in Drug Regulatory Affairs is to prepare students to become lifelong learners and leaders in a variety of settings including biotechnology, medical devices, pharmaceuticals, consulting arena, and

liaise with government and regulatory agencies worldwide. Students will: a) demonstrate a mastery of a broad didactic foundation in regulatory affairs gained in advanced coursework; b) develop strong skills through exposure to significant regulatory projects and case studies during which they translate their knowledge into practice; and c) utilize professional skills such as statistical analysis, knowledge of regulatory guidance documents, and written and verbal communication skills.

These abilities will be acquired through specific coursework and seminars and other professional and personal development offered during the course of study.

Program Goals and Objectives

Goal 1: Demonstrate an understanding of the role of a medical products regulatory affairs specialist and the dynamic nature of the regulatory field.

1.1 Evaluate real and/or simulated regulatory submissions for appropriateness of the submission to the regulatory requirements of product design, manufacturing, testing, and post-market surveillance strategies.

1.2 Examine real or simulated regulatory submissions to judge adherence to prescribed guidance documents and principles of responsible clinical research.

1.3 Identify the differences between patents, trademarks, and trade secrets as they relate to regulatory and marketing strategy.

Goal 2: Identify and utilize the laws and regulations that apply to the development, testing, and production of new medical products, including medical devices, in-vitro diagnostics (IVDs), pharmaceuticals, biotechnology-derived therapeutics, and biologics.

2.1 Assess current U.S. Food and Drug Administration (FDA) regulations that focus on drugs and medical devices and their impact on regulatory submissions such as New Drug Applications (NDA), Abbreviated NDAs, Investigational New Drug (IND) applications, 510k, and Pre-Market Authorizations (PMAs).

2.2 Delineate specific regulations in the Code of Federal Regulations (CFR) that address patient safety and their impact on product development.

Goal 3: Identify a specific regulatory issue for either a drug or device and be able to justify an appropriate position or strategy through presentation and written skills that permit students to acquire analytic and reasoning skills along with effective communication skills.

3.1 Strategically build various sections of a 510k submission for a Class II medical device given baseline data.

3.2 Demonstrate the ability to investigate case studies related to various regulatory topics (e.g. regulatory submissions, product defects, clinical trials and quality assurance strategies). This should include identification of the issue, research of the topic, and development of a report summarizing the findings.

3.3 Demonstrate the ability to construct a PowerPoint presentation on a topic related to a current regulatory issue. This presentation should have relevant content and appropriate information that addresses the selected topic adequately.

3.4 Demonstrate the ability to construct a PowerPoint presentation on a topic related to a current regulatory issue and communicate the findings effectively to an audience.

Goal 4: Demonstrate the ability to develop personal and professional skills in the field of regulatory affairs.

4.1 Identify current issues within the field of regulatory affairs and develop written responses or papers suitable for peer review.

4.2 Identify a regulatory professional in the industry and discuss with him/her the roles and responsibilities as a regulatory professional. Based on such discussions develop a hypothetical career pathway for yourself in outline format.

M.S. in Drug Regulatory Affairs - Requirements

[Program Code: 90328] {HEGIS: 1211}

Students taking the Non-Thesis Option must complete 33 credits of coursework and pass the written comprehensive examination. Students taking the Thesis Option must complete 33 credits of coursework of which 3 credits are in an Elective, 6 credits are in PHA 060 Research and Thesis, submit a satisfactory thesis proposal, submit a satisfactory written thesis, and successfully defend (orally) their written thesis.

The following courses are required for the Specialization in Drug Regulatory Affairs:

PHA	010	Biostatistics	3.00
PHA	603	Drug Regulatory Affairs	3.00
PHA	651	Pharmaceutical Labeling, Advertising and Promotion	3.00
PHA	653	Seminar in Social and Administrative Sciences	3.00
PHA	654	FDA Regulation of Over-the-Counter Drugs, Medical Devices and Dietary Supplements	3.00
PHA	657	Principles and Practices of Regulatory Compliance and Enforcement	3.00
PHA	660	Mechanics of Preparing INDs and NDAs	3.00

PHA 661 The American Pharmaceutical Industry 3.00

Thesis option students must take six (6) credits of PHA 060 and 3 credits of an Elective.

Master of Science in Pharmacy Administration

M.S. Pharmacy Administration (on hiatus)

Program Director

John Lonie, Ed.D., R.Ph.

718-488-1259

Program Description

Students will develop problem-recognition and problem-solving skills in order to facilitate positive change in various pharmacy practice settings. Graduates with the M.S. in Pharmacy Administration will have the knowledge and skills needed to advance to managerial and supervisory roles in health-system pharmacy, corporate-independent pharmacy practice, and other areas within the profession. Students may pursue careers or further education in:

- Hospital pharmacy administration
- Corporate (chain) pharmacy administration
- Pharmacy benefits management administration
- Academic pharmacy administration (Ph.D. level)
- Academia/teaching and research

Program Mission

The mission of the Master of Science in Pharmacy Administration degree program is to prepare students to become lifelong learners and leaders in a variety of settings including hospitals, long-term care facilities, chain and independent pharmacy practice management, consulting, business, non-profit research organizations and government/regulatory agencies. Students will demonstrate mastery of a broad didactic foundation in social and administrative pharmacy gained in advanced coursework, develop analytical and research skills through exposure to various projects and research opportunities in which their knowledge base is translated into practice, and employ skills such as statistical analysis and professional written and verbal communication. These abilities will be acquired through specific coursework, seminars and other professional and personal development opportunities offered during the course of study.

Program Goals and Objectives

1. Incorporate appropriate concepts and theories in solving social and administrative problems faced in a variety of pharmacy practice environments
2. Conceive, design and conduct evaluation projects to address contemporary social and administrative issues faced by health care institutions, corporate chains and independent pharmacies, and the pharmaceutical industry

3. Apply leadership skills in solving social and administrative issues faced in a variety of pharmacy practice sites and within the pharmaceutical industry

4. Identify essential resources for life-long learning

Pharmacy Administration Master of Science Requirements

[Program Code: 00200] {HEGIS: 1211}

Students taking the Non-Thesis Option must complete 33 credits of course work and pass the written comprehensive examination. Students taking the Thesis Option must complete 33 credits of course work including 3 credits of an Elective and 6 credits of PHA 060 (Research and Thesis), submit a satisfactory thesis proposal, submit a satisfactory written thesis, and successfully defend (orally) their written thesis.

Courses required for the M.S. Pharmacy Administration degree (24 credit hours):

PHA	010	Biostatistics	3.00
PHA	605	Human Resources Management	3.00
PHA	604	Pharmacoeconomics	3.00
PHA	671	Principles of Quality Management	3.00
PHA	607	Behavioral Pharmacy	3.00
PHA	633	Pharmaceutical Advertising and Promotion	3.00
PHA	653	Seminar in Social and Administrative Sciences	3.00
PHA	672	Capstone in Pharmacy Administration	3.00

Thesis option students must take six (6) credits of PHA 060 and 3 credits of an Elective.

GRADUATE COURSE DESCRIPTIONS

Course schedules are printed every semester. The listings below are tentative. They are based on past history and are subject to change.

Doctor of Philosophy Courses

PHS 602 Pharmaceutical Regulatory Overview

This course will provide a clear understanding of how new chemical entities (NME) emerge from drug discovery. When and how absorption, distribution, metabolism, and excretion (ADME) studies in discovery and exploratory development stages of drugs are conducted to assess the metabolism and excretion of a drug in animals and human. Outline the physicochemical characterization and compatibility of new molecule. First-in-human (FIH) studies in the drug development process and typically aim to characterize a compound's pharmacokinetics, potential effective concentration or dose, and safety or tolerability margins. A look at different phases of clinical trials for an understanding of the different purpose and questions these are trying to answer. Overview of submission requirements and the Food and Drug Administration's (FDA) review process. Intellectual property (IP) protection and market exclusivities to reward innovation, related legislation and ongoing issues will be discussed. Development and approval of generic versions of the new drugs and their impact on the industry will be reviewed.

Credits: 3

Annually

PHS 887 Pharmacokinetic / Pharmacodynamic Modeling and Simulation

There is a growing need for scientists trained in pharmacokinetic modeling and simulation. This is an elective course for students in the Ph.D. program in Pharmaceutics. The objectives of the course are: To provide an overview of the role of pharmacokinetic/pharmacodynamic (PK/PD) modeling and simulation in the drug development process, to give a graduate level introduction to the field of Pharmacometrics and to demonstrate the applications of Population PK/PD modeling and simulation using examples of biomarkers and clinical endpoints in various therapeutic areas such as CNS, cardiovascular, and infectious diseases. The course will balance theory and "hands on" training and will be a combination of didactic lectures, hands on exercises and larger M&S projects conducted by the students.

The pre-requisite of PHS 987 and 990 are required.

Credits: 3

On Occasion

PHS 983 Polymer Science

Polymers are widely used in the pharmaceutical, finding applications as tablet excipients,

membranes, and carriers for drugs. The properties of polymers are of great importance in drug delivery in many forms, including solid, melt and in solutions. In this course, the physical chemistry and material properties of polymers are studied, with emphasis on pharmaceutical applications and current areas of intense research.

Credits: 3

Annually

PHS 987 Advanced Biopharmaceutics and Pharmacokinetics

Biopharmaceutics is the study of the relationship between the physical and chemical factors of a drug in a dosage form and the resultant impact on the rate and extent of drug absorption and, ultimately, the pharmacological response observed after its administration. Pharmacokinetics concerns the mathematical representation of drug absorption, distribution, metabolism and excretion. In this course, the principles and theories of biopharmaceutics and pharmacokinetics will be discussed, with emphasis on the various analytical tools to characterize drug disposition in vivo. The relationship between pharmacokinetics and pharmacodynamics will also be presented. The material mastered in this course will be used to develop and test mathematical models of drug disposition in PHS 990 (Mathematical Modeling).

Credits: 3

On Occasion

PHS 989 Special Topics in Pharmaceutics

Special topics in pharmaceutics that are of current interest.

Credits: 3

On Occasion

PHS 990 Mathematical Modeling

This course involves application of the pharmacokinetic principles presented in PHS 986 (Advanced Biopharmaceutics and Pharmacokinetics) to develop mathematical models which describe drug absorption, distribution, metabolism and excretion, with emphasis upon computer "fitting" of pharmacokinetic and pharmacokinetic-pharmacodynamic models to characterize the disposition of a compound in biological systems.

The pre-requisite of PHS 987 is required.

Credits: 3

On Occasion

PHS 997 Solid State Characterization

Substantial development has taken place in the last decade in terms of emerging technology in the field of analytical chemistry. As a graduate student it is important to keep abreast of these technologies and understand the underlying principles behind the techniques and technologies. This course will help students develop the ability to solve theoretical problems and help them identify relevant techniques to obtain meaningful data. Together with case studies and examples, this course will help graduate students to think independently to solve

problems related to solid-state characterization.

Credits: 3

Annually

PHS 998 Ph.D. Research & Thesis

Each Ph.D. candidate will conduct Ph.D. thesis research under the guidance of a committee whose chair will be the candidate's major professor. The enrollment and fee for this course registration will be repeated for a minimum of four semesters, and until the dissertation is completed.

Credits: 3

Every Semester

Master of Science Courses

Pharmaceutics, Industrial Pharmacy, and Cosmetic Science

PHS 020 Seminar In Pharmaceutics

(For M.S. Students) A presentation and analysis of recent developments in industrial pharmacy and pharmaceutics. Students are expected to present oral and written reports on a particular subject in consultation with the instructor in charge. May be repeated for credit.

The following pre-requisites are required: Industrial Pharmacy=PHS 701, 901, 931, 934 & 972;

Cosmetic Science=PHA 010, PHS 931, 950, 951, 960 and 972.

Credits: 3

Every Semester

PHS 060 Research And Thesis

Individual research in the various areas of specialization in cosmetic science. Students doing the thesis option must register at least twice for this course. Pass-Fail only.

Credits: 3

Every Semester

PHS 070 Special Problems

Laboratory, fieldwork or library research in the various areas of specialization. Pass-Fail only. Permission of the instructor required.

Credits: 3

Every Semester

PHS 750 Pharmaceutical Good Manufacturing Practices

This course provides critical knowledge of legislation relating to the registration, manufacture, storage and supply of pharmaceutical products, GxP and quality system compliance, and concepts of quality and risk management, quality assurance and quality control with this heavily regulated industry.

Credits: 3

Not Set

PHS 760 Dermal and Transdermal Drug Products: Development and Regulations

This course will cover the basic concepts of dermal and transdermal drug delivery such as formulation

types and properties, as well as a mechanistic understanding of drug release from the formulation, partitioning, and disposition kinetics of the API in the skin.

Credits: 3

On Demand

PHS 761 QbD and Process Validation

This course will provide the student with an understanding of the scientific principles and regulatory requirements for pharmaceutical companies that are legally mandated to validate their manufacturing processes. It will examine development of quality products and processes and examine the elements of process validation that are essential for the production of safe and effective drugs.

Credits: 3

On Demand

PHS 931 Advanced Physical Pharmacy I

A systematic study of the application of physicochemical principles to the pharmaceutical and cosmetic sciences. Topics include complexation, colloids, interfacial phenomena, dissolution theory, suspensions, micrometrics and rheology.

Credits: 3

Every Semester

PHS 932 Advanced Physical Pharmacy II

A systematic study of the application of physicochemical principles to the pharmaceutical and cosmetic sciences. Topics include complexation, colloids, interfacial phenomena, dissolution theory, suspensions, micrometrics and rheology.

Credits: 3

Every Semester

PHS 934 Principles of Industrial Pharmacy I

A study of methods used to formulate, manufacture and stability-test various dosage forms including tablets, ointments, creams, capsules, suspensions, sterile products, etc. The different techniques used to formulate dosage forms possessing unique properties such as sustained or delayed release will also be covered.

Credits: 3

Every Fall

PHS 935 Principles of Industrial Pharmacy II

A laboratory course designed to give students experience in utilizing industrial instrumentation to test basic principles and theories in the design and production of various dosage forms.

Credits: 3

Every Spring

PHS 936 Dosage Form Design

Biopharmaceutic and pharmacokinetic principles, coupled with physical pharmacy concepts, are used to discuss methods necessary for optimizing the design of various drug-delivery systems. The course is intended for those having a basic understanding of dosage forms and their design, and is geared to the underlying principles of drug release from

dosage forms. While a major portion of the course is devoted to oral solids, liquids, topicals and parenteral design are also covered, together with means of evaluation and testing.

Credits: 3

On Occasion

PHS 937 Pharmaceutical Engineering

An introduction to basic engineering principles that are involved in the commercial manufacture of pharmaceutical dosage forms. Discussions will focus on how such principles are blending, mixing, heat and mass transfer are utilized to design and specific equipment used in producing powders, tablets, capsules and parenteral products. Basic concepts of cost estimation will also be discussed.

Credits: 3

On Occasion

PHS 950 Cosmetic/Dermatological Formulations and Technology I

(The first course in a two-semester sequence.)

Designed for in-depth studies of skin, mechanistic analysis of the relevant skin functions, percutaneous absorption, rationale for dermatologic formulations, physicochemical principles used, performance criteria and evaluation of the topical systems. Emphasis is placed on the product development, scale-ups, manufacturing, stability-testing and performance evaluations of modern-day cosmetic, toiletry and pharmaceutical topical products. The courses cover all types of skin care, hair care and treatment systems including creams, lotions, shampoos, gels, fluids, makeups, sunscreens and pharmaceutical dermatologicals.

Credits: 3

Every Fall

PHS 951 Cosmetic/Dermatological Formulations and Technology II

(The second course of a two-semester sequence.)

Designed for in-depth studies of skin, mechanistic analysis of the relevant skin functions, percutaneous absorption, rationale for dermatologic formulations, physicochemical principles used, performance criteria and evaluation of the topical systems. Emphasis is placed on the product development, scale-ups, manufacturing, stability-testing and performance evaluations of modern-day cosmetic, toiletry and pharmaceutical topical products. The courses cover all types of skin care, hair care and treatment systems including creams, lotions, shampoos, gels, fluids, makeups, sunscreens and pharmaceutical dermatologicals.

The pre-requisite of PHS 950 is required.

Credits: 3

Every Spring

PHS 952 Cosmetic/Dermatological Formulations and Technology Laboratory

Designed for in-depth study of product development, scale-up, manufacturing, stability-testing and performance evaluations of modern-day cosmetic and toiletry products.

Credits: 3

On Occasion

PHS 958 Aerosol Science and Technology

An in-depth study of the physicochemical principles of aerosol science and technology. The topics covered include: aerosol propellants, containers, valve and actuator systems, product development, manufacturing, stability testing and performance evaluations of all types of aerosol products. Special emphasis is placed on the homogeneous and heterogeneous systems used in the formulations of topical, nasal and inhalation aerosol drug delivery products.

Credits: 3

On Occasion

PHS 960 Properties/Applications of Cosmetic and Pharmaceutical Raw Materials

Designed to be of special value to individuals involved in formulation and manufacturing work of cosmetic, toiletry and pharmaceutical products. Covers the physicochemical properties of major classes of raw materials. These include tablets, ointments and creams, surfactants, film formers, plasticizers, preservatives, antioxidants, sunscreens, thickeners and dispersants, pharmaceutical solvents, etc. Special emphasis is placed on the creative and innovative application of these raw materials in the development of contemporary cosmetic/toiletry and pharmaceutical dosage forms.

Credits: 3

Every Fall

PHS 972 Methods of Pharmaceutical Analysis

Theory of chromatographic, spectrophotometric and other methods of analysis as applied to clinical, pharmaceutical and cosmetic problems is discussed.

Credits: 3

Every Spring

Pharmacology, Toxicology and Medicinal Chemistry

PTM 020 Seminar In Pharmacology/Toxicology

Students, faculty and guests review and discuss original works and recent advances in pharmacology and toxicology. The seminar will include invited lectures on cutting edge research. Mandatory for every student graduating in Pharmacology/Toxicology. May be repeated for credit.

Credits: 3

Every Semester

PTM 060 Research And Thesis

Individual research in the various areas of specialization. Students doing the thesis option must register at least twice for this course. Pass-Fail only.

Credits: 3

Every Semester

PTM 070 Special Problems

Laboratory, fieldwork or library research in the

various areas of specialization. Pass-Fail only.
Permission of the instructor required.

Credits: 3

Every Semester

PTM 704 Autonomic Pharmacology

A course designed to acquaint the students with the historical development of the concept of neurohumoral transmission, adrenergic and cholinergic receptors, storage and release of neurohormones, blocking agents, and biochemical aspects of adrenergic and cholinergic action.

Students will be required to read and discuss selected references.

Credits: 3

Every Fall

PTM 705 Biochemical Pharmacology

This course considers the mechanisms of drug action from the molecular-biochemical viewpoint.

Initial discussion of the fundamentals of drug action is followed by extensive coverage of major drug groups such as anticancer, antimicrobials, analgesics and autonomic drugs. Molecular parameters of receptors are emphasized throughout as in enzymology, where applicable. Outside readings will be assigned.

Credits: 3

Every Fall and Spring

PTM 708 Cardiovascular Pharmacology

This course will consider the rational therapy in cardiovascular diseases. Principles of physiology, pathology and pharmacology will be included in the discussion of hypertension, coronary artery disease, angina pectoris, myocardial infarction, congestive heart failure and arrhythmias. New treatment modalities will be considered.

Credits: 3

On Occasion

PTM 709 Advanced Pharmacology

This is an advanced course in the basic principles of pharmacology. Discussion will include receptor theory, enzyme activity and inhibition, structure activity relationship, pharmacokinetics, adverse reactions and drug-drug interactions.

Credits: 3

Every Fall

PTM 802 Experimental Methods in Pharmacology and Toxicology

Modern techniques used in the qualitative and quantitative evaluation of drugs and drug toxicity in animal systems. These include whole animal studies, isolated tissue techniques and analytical instrumentation.

Credits: 3

On Occasion

PTM 905 Principles of Immunotherapy

This course is concerned with the study of antigens and the immune system, the humoral response and the cellular response to antigen. Non-atopic immunological drug reactions and disease states

characterized by abnormal immunological responses will be discussed. Research papers dealing with selected immunological topics will be assigned and discussed.

Credits: 3

On Occasion

PTM 910 Toxicology of Drugs and Chemicals

General principles of toxicology; current trends and recent developments in the prevention, detection, diagnosis and treatment of acute and chronic toxicities from drugs and chemicals; toxic drug interactions.

Credits: 3

Every Fall

PTM 920 Molecular Pharmacology

An advanced course in pharmacology dealing with the molecular mechanisms of drug action. The discussions will include receptor-drug interactions, importance of chirality, receptor-ligand interactions, interactions of drugs with endogenous polymers, modulators of chemical transmitters and such other topics involving molecular biology.

Credits: 3

On Occasion

PTM 923 Advanced Medicinal Chemistry

This lecture course conveys basic principles of contemporary drug design. An overview will first be provided of drug chemical characteristics, pharmacokinetics, pharmacodynamics, toxicology, pharmacogenetics and bioinformatics.

Structure/function relationships of drug targets (receptor proteins, enzymes, nucleic acids) will be discussed in the context of drug design toward optimizing interactions with the biological target. De novo drug design and optimization of lead compounds obtained from high throughput screening will be taught with respect to stereochemistry, quantitative structure-activity relationship (QSAR), computational molecular modeling of drug candidates as well as the drug-target interaction, and rational design of drug analogs. Design strategies will include combinatorial/parallel synthesis, prodrugs, and taking into account potential drug delivery issues. Student presentations of primary literature on recent advances in medicinal chemistry will be occasionally required.

Credits: 3

Annually

PTM 924 Clinical Pharmacology and Toxicology

This lecture course covers the fundamentals of clinical use of therapeutic drugs as well as basic principles in managing the poisoned patient. A brief pharmacological review is provided on drug metabolism and transport, assessment of drug therapeutic effects, pharmacogenetics, and individualization of drug therapy, followed by discussions on molecular mechanisms of toxicity, toxin-induced biological changes and organ systems affected, clinical manifestations of toxicity, related laboratory tests, and treatment approaches to drug-

and chemical-induced toxicity. The course will include the pharmacotherapy of common diseases and disorders such as hypertension, congestive heart failure, asthma, renal disorders, psychiatric disorders, peptic ulcer disease and infectious diseases. Use of chemotherapeutics, antibiotics, and other medication regimens commonly associated with toxicity will also be discussed. Student presentations of primary literature on recent advances in medicinal chemistry will be occasionally required.

Credits: 3

Annually

PTM 925 Pharmacogenomics

Pharmacogenomics, the union of pharmacology and genomics, is emerging as a novel medical research field. This course reviews the history and current status of the influence of hereditary factors on drug action and metabolism, as well as predisposition to diseases. It is intended to introduce graduate students to pharmacogenomics and personalized medicine through a series of lectures, case studies and students' presentations of cutting-edge technologies used in this field.

Credits: 3

On Occasion

PTM 926 Epigenetics

This course explores the fundamental epigenetic changes that have been uncovered in cancers, cardiovascular disease, diabetes and many more. It addresses controversial issues involving epigenetics and the placebo effect as well as discusses novel therapeutic approaches to disease management based on the study of the epigenome.

Credits: 3

Not Set

Pharmacy Administration and Drug Regulatory Affairs

(The program in Pharmacy Administration is currently on hiatus. The program in Drug Regulatory Affairs is currently active.)

PHA 010 Biostatistics

An introductory course in statistics with emphasis on applications in the health sciences. Topics include description of data, measures of central tendency and dispersion, inferences from data, significant differences, and measures of similarity and differences among groups of data.

Credits: 3

On Demand

PHA 050 Research Methodology

A course in the design, implementation and evaluation of research. Topics include problem identification, literature review, research approaches, hypotheses, data-gathering instruments and methods, data analysis and generalization.

Credits: 3

On Occasion

PHA 060 Research And Thesis

Individual research in the various areas of specialization, Pass-Fail only.

The pre-requisites of PHA 050 and 653 are required.

Credits: 3

Every Semester

PHA 070 Special Problems

Laboratory, fieldwork or library research in the various areas of specialization. Pass-Fail only.

Permission of the instructor required.

Credits: 3

On Occasion

PHA 603 Drug Regulatory Affairs

(This course is a prerequisite for all Drug Regulatory Affairs courses, except PHA 661) A comprehensive introductory course that provides an overview, understanding of, and appreciation for the numerous statutes and regulations governing drugs, medical devices and cosmetics.

Credits: 3

Every Fall

PHA 604 Pharmacoeconomics

This course presents socioeconomic aspects of health care that influence need, demand and provision of health care through the private and public sectors. The course will also develop basic concepts of economic theory as an analytical tool to understand them from provider as well as consumer points of view in an evolving healthcare delivery system.

Credits: 3

On Occasion

PHA 610 Organizational Behavior and Communication for Pharmacy Professionals

This course deals with human behavior and communication in organizations with specific case examples from the pharmaceutical industry.

Theories, case discussion and skill-oriented activities are applied to various topics.

Credits: 3

On Occasion

PHA 645 Internship in Drug Regulatory Affairs

This course is designed for those graduate students who have an interest in employment opportunities in the pharmaceutical industry or government. The student works in an on-the-job setting on carefully planned work activities designed to provide a basic understanding of the drug regulatory environment, process and outcome. A report of these work activities is required at the completion of the course. Pass-Fail only.

Credits: 3

On Occasion

PHA 651 Pharmaceutical Labeling, Advertising and Promotion

A comprehensive course which reviews prescription and OTC drug labeling, advertising and promotion

regulations. Examines the development and clearance of labeling and advertising pieces (container labels, package inserts, journal ads, direct mail, visual aids, reminder advertising, etc.).

Discussion of principles of Fair Balance, Brief Summary and Full Disclosure. Students will be required to prepare advertising and promotional pieces. The role of the regulatory affairs department, product manager, advertising agency, etc., will be discussed. Review of institutional advertising, preapproval advertising, prescription drug advertising to the consumer (PDAC), comparative advertising.

The pre-requisite of PHA 603 is required.

Credits: 3

On Occasion

PHA 653 Seminar in Social and Administrative Sciences

Students generate solutions to current problems in pharmaceutical care, the pharmaceutical industry and public policy, and support their views with evidence that reflects concepts, principles, theories and philosophies from the social/behavioral/administrative sciences. Based upon their research, students will prepare written reports, give multimedia class presentations and conduct class discussions.

Credits: 3

Every Fall and Spring

PHA 654 FDA Regulation of Over-the-Counter Drugs, Medical Devices and Dietary Supplements

Provides the participants with an understanding of, and an appreciation for, the regulation of over-the-counter drugs, medical devices, cosmetics and animal health drugs as legislated by the Federal Food, Drug, and Cosmetics Act and its amendments and the Fair Packaging and Labeling Act.

The pre-requisite of PHA 603 is required.

Credits: 3

Every Spring

PHA 655 Chemistry, Manufacturing and Controls (CMC) Regulatory Affairs

This course describes various aspects of CMC regulatory affairs as they relate to the development, approval and marketing processes for drugs in the U.S. Topics include: FDA vs. pharmaceutical industry viewpoints on CMC regulatory affairs; quality issues related to CMC regulatory affairs; organization of the CMC regulatory function and role of the CMC regulatory professional; CMC regulations and guidance; format, required, required content and scientific considerations for the CMC sections of INDs and NDAs for traditional dosage forms; and an overview of CMC requirements and considerations for other submissions (i.e. generics, biologics, animal drugs, drug master files, devices and international dossiers). Offered on occasion.

The pre-requisite of PHA 603 is required.

Credits: 3

On Occasion

PHA 657 Principles and Practices of Regulatory Compliance and Enforcement

This course emphasizes the history, development, implementation, monitoring, operational procedures and audit techniques of investigation and enforcement. Enforcement issues and problems are addressed.

The pre-requisite of PHA 603 is required.

Credits: 3

Every Spring

PHA 658 International Drug Regulatory Affairs

The increasing globalization of product development and marketing means that companies that manufacture and market products in many different countries must comply with an ever-increasing spectrum of laws and regulations. The borders that divide nations seem to be shrinking as the means of rapid communication increase. But the lack of regulatory consistency across the globe makes it extremely difficult for pharmaceutical manufacturer's to implement a globally acceptable product design. The purpose of this course is to provide an overview of global regulatory requirements for U.S. and EU for product registration. Topics covered will include the understanding of the ICH (International Conference on Harmonization) and CTD (Common Technical Document) as well as some basic understanding of international product registration requirements. Following this course, students should be able to understand the fundamentals of global regulatory issues.

Credits: 3

On Occasion

PHA 660 Mechanics of Preparing INDs and NDAs

This course provides an in-depth assessment and analysis of the requirements of the investigational new drug (IND) and new drug applications (NDA). Component parts, appropriate format, assembly and submission of each is emphasized.

The pre-requisite of PHA 603 is required.

Credits: 3

Every Fall

PHA 661 The American Pharmaceutical Industry

This course provides a comprehensive view of the key activities in which major pharmaceutical companies are involved, e.g., research and development, pilot manufacturing, manufacturing and packaging, quality assurance, marketing, sales, distribution, regulatory affairs and pharmacy relations.

Credits: 3

On Occasion

PHA 668 Medical Device Regulatory Affairs

The course introduces students to an in depth understanding of medical device regulatory affairs in order to prepare them for opportunities in the Medical Device Industry. This course includes an

overview of the medical device industry, premarket regulatory submissions, creating regulatory strategies and adherence to regulatory compliance.

Credits: 3

Not Set

PHA 669 Global Market Access: Application of Economic Concepts in Valuing Pharmaceuticals

The Global Market Access course will teach the students how to apply the theoretical knowledge of finance, accounting, strategy, marketing and health economics to creating a winning value proposition for pharmaceutical products - so that graduates can be ready for complex payer negotiations without needing years of training. This is a practical how-to course, with hands on workshops, real world case studies and payer negotiation "war games".

Credits: 3

Not Set

PHA 671 Principles of Quality Management

This course will be offered either in a blended or traditional lecture format. A strong working knowledge of quality management theories are crucial when solving problems making decisions, and developing policy. These are highly sought after skills in health-system and other pharmacy practice areas. Quality management evaluates, develops and establishes programs that ensure the best services possible and is crucial to effecting change within organizations. Through assigned readings, case studies, lecture and class discussion students will apply knowledge to real life scenarios. Learning modules will include supply chain management, assuring reliability, availability and maintainability of operations.

Credits: 3

Annually

PHA 672 Capstone in Pharmacy Administration

This course will be offered either in a blended or traditional lecture format AU MS in Pharmacy Administration students will complete an individual capstone project that demonstrates critical thinking, problem solving, and communications skills. The topic chosen exhibits the student's ability to integrate knowledge in human resource management effective communication, quality management, innovation and change management.

Credits: 3

Annually

ADMISSION

Eligibility

1. Holders of the baccalaureate degree, or its equivalent, from an accredited college or university are eligible to apply for admission. The program specializations in Pharmaceutics usually require an undergraduate degree in pharmacy, chemistry, biology or a related science specialty. Certain courses in these programs have specific undergraduate prerequisites such as Organic Chemistry, General Physics and Calculus.
2. The applicant must have an acceptable record in undergraduate studies (preferably a "B" average or better) as reflected in official transcripts of all colleges and universities attended. Attention is given to overall grade averages, grade trends during undergraduate study and areas of scholastic strength. Consideration is also given to the professional accomplishments of the applicant since the time of completion of undergraduate studies.
3. Applicants of M.S. Pharmacology/Toxicology must have completed the following prerequisites in order to be eligible for the program: Human Anatomy & Physiology, Biochemistry, and Pharmacology.

Admissions Procedures

Applicants are strongly encouraged to submit an application online at www.liu.edu/apply. A paper application may be obtained by visiting the Office of Admissions, LIU Brooklyn, 1 University Plaza, Brooklyn, NY 11201-5372, emailing bkln-gradadmissions@liu.edu, or by calling 718-488-1011. A bachelor's degree (or its equivalent) from an accredited institution, indicating an acceptable record, is necessary to be considered for admission to the graduate programs. Additional requirements are described in the eligibility section above.

The completed application must be submitted with a personal statement of approximately 500 words. Applicants must also submit official transcripts from all colleges and universities attended showing all undergraduate and graduate coursework taken and degrees received, if any. Three completed letters of recommendation are required. A nonrefundable application fee is required. If the applicant mails or submits a paper application in person, they will be assessed a nonrefundable application fee. LIU Brooklyn encourages students to self-manage their application, which means it is the responsibility of the applicant to collect all required documents needed for admission and manage where documents are to be mailed. Students needing assistance and clarification are encouraged to email the Graduate Admissions Office at bkln-gradadmissions@liu.edu.

Most graduate programs are available each semester on a rolling admissions basis with applications accepted as long as space is available. However, it is strongly encouraged that applications and supporting materials be submitted as early as possible. Applications and all supporting documents from international applicants must be received by May 1st for fall admission and by November 1st for spring admission.

Applicants for all graduate pharmacy programs must submit GRE scores from the General Aptitude Test. For information on the GRE, contact the Educational Testing Service at GRE-ETS, P.O. Box 6000, Princeton, NJ 08541-6000 or at www.ets.org/gre.

A student will be classified as matriculant when accepted into a degree program. Students admitted with technical or academic deficiencies (e.g., incomplete official transcripts) will be classified as matriculants with conditions, pending the fulfillment of those conditions. Technical deficiencies must be removed before the end of the first semester of enrollment. Academic deficiencies must be satisfied before the completion of 12 credits required in the degree program or within one year. Students are in good academic standing as long as they are permitted to continue in attendance in matriculant status.

In addition, students holding a bachelor's degree from accredited colleges and universities may be admitted as non-matriculated if the coursework is intended to help them in their jobs. Special Students must meet the same standards of admission as those admitted to degree candidacy. Granting Special Student status for either technical or academic reasons does not obligate the college to give such applicants matriculant status. Admission of a Special Student to matriculant status will depend upon the quality of all of the student's credentials as well as performance in courses taken as a Special Student.

Notification of Acceptance

Students will be notified of the admissions decision shortly after all the necessary documents (application, transcript, official test score report and letters of recommendation) are received. Once a candidate is accepted, he or she is required to make a deposit of \$500 to reserve a place in the entering class. This deposit is applied to the first semester's tuition. It is not refundable should the student decide at a later date not to attend the LIU Brooklyn campus.

International Students

Applications are welcome from international students who hold the equivalent of a four-year bachelor's degree. To be considered for admission, undergraduate transcripts/mark sheets for each year of study, including degree conferral (diploma/degree certificate) are required. All

records must be translated into English and be original or copies of the original, certified/attested by an official of the school issuing that record or the Consulate/Ministry of Education of the issuing country. A course-by-course evaluation, completed by an acceptable international credential evaluation agency, is recommended, but not required, on all transcripts/mark sheets from colleges or universities outside of the United States. A complete list of acceptable agencies can be requested from the Office of Admissions or found on www.liu.edu/brooklyn/forms. All international students for whom English is not a native language are required to take the Test of English as a Foreign Language (TOEFL) administered by the Educational Testing Service or the International English Language Testing System (IELTS) examination. Information on the examinations may be obtained by visiting www.ets.org and www.ielts.org, respectively from American consulates and embassies abroad, or from the United States Information Service (USIS) in each country. Proficiency in English must be demonstrated. A student who needs additional study in English may be required to take English courses for foreign students at LIU before or concurrently with an academic program.

Applications from international students must be accompanied by the nonrefundable application fee and received no later than May 1 for the fall semester and November 1 for the spring semester. When credentials are complete and found to be satisfactory, the applicant will be required to submit a \$500 deposit and a certified statement of financial support. The deposit will be applied to tuition and is not refundable should the student decide not to attend the university. An I-20AB or IAP-66 form will be issued upon receipt of the deposit and statement of financial support. Students should not make plans to come to the United States until they have received the appropriate non-immigration forms.

Health insurance coverage is compulsory for all international students and their dependents. Information pertaining to the health insurance coverage may be obtained from the Office of International Students, which assists students on campus.

Students holding F-1 (student) visas are required by law to be fully matriculated and be registered for at least nine credit hours per semester.

Students should be aware of tuition rates as well as of the relatively high cost of living in and around New York City and come prepared to finance their education.

Transfer Credits

Advanced Standing

Graduate courses taken at other graduate schools prior to admission to LIU Pharmacy may be transferred for credit. Such courses may be used to meet requirements, provided the student

requests the transfer of credit in writing at the time of application. Transfer credit must be in advanced work and is limited to six credits for courses with a grade of "B" or higher completed within the three-year period prior to admission to LIU Pharmacy. All transfer credits are subject to approval by the program director and associate dean.

New York State Immunization Law

The New York State Health Department requires college and university students born on or after January 1, 1957, to be immunized against measles, mumps and rubella. All students attending the university, including matriculants and non-degree students, must show proof of immunity if they wish to register for classes. In addition, New York State requires that LIU Brooklyn maintain a record of each student's response to the meningococcal disease and vaccine information. The form must be signed by the student and contain either a record of meningitis immunization within the past 10 years OR an acknowledgment of meningococcal disease risk and refusal of meningitis immunization signed by the student.

For information on student procedures for complying with this law, please contact the Office of Enrollment Services at 718-488-1042.

ACADEMIC POLICY

Student Responsibility

The student is responsible for knowing deadlines, degree requirements, and enrolling for courses listed under the degree program. The student is held responsible for knowing the university regulations with regard to the standard of work required for continuance in the graduate program. For additional information, students should consult with the Office of Graduate Programs.

Residency Requirements

Students are expected to complete all of their courses at LIU Pharmacy. Students may, however, receive a maximum of six transfer credits from other institutions. Permission to take such courses at other institutions while in residence at the college must be obtained from the program director and the associate dean.

Grades and Quality Points

Credit is granted for courses completed with the grades A, A-, B+, B, B-, C+, or C. The F grade signifies failure. P (passed for credit) may be used to mark the completion of work in certain research practicums, seminars, workshops and thesis courses.

INC (incomplete) may be used as an interim grade for the first half of a two-semester course, for failure to complete all course requirements, and for thesis courses before acceptance of the thesis. Any other failure to complete the course requirements (e.g., the submission of a term paper) may be recorded as INC. Except in thesis courses, INC marks that have not been replaced by a letter grade within one year may be changed only by repeating the course.

A student may not repeat a course without the permission of his or her program advisor and/or the associate dean. If a student, with appropriate permission, repeats a course more than once, all grades except the first will be computed in the student's average. Satisfactory completion of the course does not eliminate the original INC or ABS from the student's record.

AUD recognizes that a course has been audited.

The symbol W is assigned when students officially withdraw from a course in which they were doing satisfactory work. The symbol UW is assigned when students unofficially withdraw from a course. The UW is not computed in the student's average.

The college's GPA is employed to determine the average grade status of a student. The grade A corresponds to a 4.000 quality point equivalent, A- to 3.667, B+ to 3.333, B to 3.000, B- to 2.667, C+ to 2.333, C to 2.000 and F to 0.000. P, INC, W and

UW grades do not affect the GPA.

The quality points to which a student is entitled are computed by the formula $X = N \times Y$, where X is the number of quality points, N is the quality point equivalent assigned to the grade, and Y is the number of credits. The GPA is obtained by dividing the sum of the quality points received in all courses by the total number of credits, including unrepeatable F's.

GPA computations are carried to the third decimal place from which rounding takes place to the second decimal place. For example, a computed GPA of 2.994 will be rounded down to 2.990. A computed GPA of 2.995 will be rounded up to 3.000. On all official LIU transcripts, a GPA will be displayed to three decimal places with the third decimal place always being zero due to rounding.

Academic Standards

The college reserves the right to dismiss, at any time, a student whose academic record is unsatisfactory. To be in good academic standing, a student must make appropriate progress toward fulfilling all requirements of the graduate program (M.S. or Ph.D.) in which he/she is enrolled.

Failure to do so will be cause for dismissal.

Academic probation is the initial official act for a student failing to make satisfactory progress.

Students will be duly notified by the program director that they have been placed on probation.

A graduate student will be placed on probation for:

1. failure to maintain an overall cumulative grade-point average (GPA) of 3.000 and/or,
2. earning a grade of C+ (or less) in more than two courses (these courses may be repeated with the permission of the program director and associate dean).

A graduate student will be dismissed from the program for:

1. failure to rectify probationary status (i.e., obtaining GPA of 3.000) within two semesters.
2. receiving "F" grade in any course.
3. failure on the qualifying examination (for students in the Ph.D. program). Note: the student may be allowed to repeat the examination. However, if a student fails the examination more than once, he/she will be dismissed from the program.
4. failure on the comprehensive examination (for students in the M.S. program who choose the non-thesis option). Note: the student may be allowed to repeat the examination. However, if a student fails the repeat examination, he/she will be dismissed from the program.

A student may appeal an academic dismissal once by petition to the associate dean of the college. The petition should present a thorough analysis by the student of the reasons for having failed to maintain satisfactory academic progress and a comprehensive plan for rectifying his/her deficiencies within a reasonable period of time,

preferably after one semester of study but not exceeding two semesters of study, and that conforms with all other academic regulations of the college. The petition is considered by the associate dean who may request that the student appears in person to substantiate his/her position and answer questions. Students are advised that successful appeals of academic dismissals are rare and usually occur only in those circumstances where substantive underlying causes for unsatisfactory academic progress were previously unknown to the college. Generally, in cases where substantive underlying causes exist for unsatisfactory progress, an extension of academic probation will have been granted to allow the student additional opportunity to remedy his/her noncompliance with satisfactory academic progress. Decisions of the associate dean that a student believes may demonstrate arbitrary and capricious treatment or to be fundamentally unfair may be appealed, as a final step, to the dean of LIU Pharmacy.

Criminal Background and Drug Testing

A criminal conviction and/or the use of illegal drugs may impede or bar your entry into your chosen field of study. Students seeking entrance into many graduate fields of study including counseling, education, and health and human services professions should be aware that a criminal record can result in the refusal of licensing/certification/registration agencies to issue the credential needed to practice in that field of study. Prospective students are urged to contact the pertinent state and/or federal licensing agency to inquire whether a criminal record will have an impact on licensure or certification eligibility.

Many clinical/field experience affiliates now require the completion of criminal background checks and/or drug testing for employees, volunteers and students affiliated with the site. Therefore, students who plan to participate in a clinical/field experience may be asked to undergo a criminal background check, and/or a drug screen. Students should be aware that our clinical/field affiliates can reject or remove a student from the site if a criminal record is discovered or if a drug test is positive. In the event that a student is rejected from a clinical/field site due to information contained in the criminal background check, or drug screen, the student may be unable to complete a required clinical/field experience. In such an event, the student may be advised to withdraw from the program.

Public Information Policy

The Family Educational Rights and Privacy Act (FERPA) of 1974 specifically provides that a school may provide what they deem "directory information," without the student's consent or as

provided by the law. Directory information at Long Island University includes the following: the student's name, enrollment status, class, major field of study, dates of attendance, degrees and awards received, past and present participation in officially recognized sports and non-curricular activities, physical factors (height, weight) of athletes and the most previous educational agency or institution attended. Students who wish to have their directory information withheld can make this election by filing the appropriate form at Enrollment Services.

Registration

Registration for New Graduate Students

Newly admitted students to the graduate programs should closely follow the registration procedures provided to them. It is highly recommended that they consult with the program director about course selection, and work with the coordinator of graduate programs and the program director to learn the specific requirements of the selected program.

Registration for Continuing Students

Registration beyond the first semester depends on satisfactory progress in fulfilling college graduate programs' conditions. For further information about grade requirements, see the section "Academic Standards". For continuing students in good standing, registration for approved degree program courses outlined in the LIU Pharmacy bulletin is required. Students not fulfilling the requirements should make an appointment with the program director before registering for courses in order to obtain approval and update the progression worksheet maintained in the Office of Graduate Studies.

Late Registration

Beginning the first day of classes for a session and continuing for approximately two weeks is a period of time referred to as Late Registration. Within the late registration period, a student may register for courses only with the consent of the program director. After the late registration period, consent of the associate dean is required. Please refer to the academic calendar maintained by Enrollment Services for registration dates and deadlines.

Maintenance of Matriculation

It is expected that students will fulfill the requirements for advanced degrees by registering over successive semesters. Degree candidates may find themselves unable to register for courses during one or more semesters or to complete all coursework because they are working on their thesis. To remain on active status and to qualify for a degree under the requirements in effect when admitted, such students must register each semester by writing "Maintenance of

Matriculation" on the registration form and paying a \$250 fee for each such semester. A student who fails to register under "Maintenance of Matriculation" will be classified as inactive. Re-admission will require the submission of a new application for admission and a review of the student's record and qualifications with respect to the requirements for admission in effect at the time of readmission.

Students serving in the Armed Forces of the United States maintain matriculation automatically during the time of their service. They are required, however, to inform the Office of Graduate Studies of the dates of their entrance into military service and termination of active duty.

Maintenance of matriculation for M.S. students without attending classes is limited to one year. Approval for extension of this time limit must be obtained from the associate dean or a designated representative. The limitation on maintenance of matriculation does not apply to Ph.D. candidates who have begun work on their doctoral dissertation.

Withdrawal and Refunds

Withdrawal from Courses

Students who fail to withdraw officially from a course by the date so indicated by the Office of Graduate Studies, and do not attend and/or meet the course requirements have, in fact, earned an "F," and will receive that grade designation. The grade "W" will be given to students who are in compliance with official withdrawal procedures. Students themselves must initiate formal withdrawal procedures. Failure to do so can result in loss of possible refunds or inaccurate records of academic performance (or both). Students must obtain a Withdrawal Form from the Office of Graduate Studies and have this form signed by the instructor of the course(s) concerned.

A student who wishes to withdraw from the college should notify the Office of Graduate Studies in writing. Otherwise, honorable dismissal will be withheld. No certificate or transcript of record will be granted, however, until all financial indebtedness is settled. If a student withdraws from the college prior to the completion of a semester, he or she must file the appropriate Withdrawal Form with the Office of the Registrar.

A student who withdraws from a course in which he or she is doing satisfactory work will be given the grade of W. A student registered for a course is considered to be in attendance until the date of his or her official withdrawal.

Withdrawal from courses is permissible at any time up to the deadline established by the Office of Graduate Studies. The symbol UW is assigned when a student unofficially withdraws from a course. Neither W nor UW is computed in the student's average.

Students who are on academic probation when they withdraw from all courses are not eligible for readmission without their dean's approval.

Withdrawal to Enter the Armed Forces

Students withdrawing to enter into the Armed Services should note carefully the following regulations outlining the position of the college with regard to such withdrawal:

1. Application for withdrawal in good standing must be made at the Office of the Registrar. The official date of withdrawal is the date on which the application is made.
2. Students may receive a proportionate refund.
3. Specific policies may be obtained from the Office of the Registrar.

Refunds

When a student withdraws, the university will refund tuition according to the schedule shown on the pages following Tuition and Fees listings.

Registration, graduation and university fees are not subject to proration and are not returnable.

The date of withdrawal will be considered the day on which the student has completed all Withdrawal Forms and has submitted these forms to the Office of the Registrar.

A student may be dismissed at any time for misconduct of such a nature as to be prejudicial to the college. In the event of such dismissal, fees will not be refunded in whole or in part.

Related Curricular Matters

Change of Plan

A student desiring to transfer from one LIU Pharmacy graduate program to another must be formally accepted by the program director of the graduate program to which admission is sought and by the associate dean. The student is expected to notify the program director of the program that he or she is leaving.

Repeating Courses

Students may repeat any course with the permission of their advisors. To repeat a course more than once, they must have the permission of the program director and associate dean. Credit will be earned only once, and the second grade—whether higher or lower—will be computed in the student's average. After a student takes a course a second time, all grades except the first will be computed in the student's average.

Cancellation of Courses

LIU Pharmacy reserves the right to cancel undersubscribed courses or courses for which no faculty are available to teach. When it does so, there is no program change fee.

Time Limit

The M.S. curricula are projected for completion within a two-year period.*

For the period of study for the doctoral programs, students should consult the program (see Graduate Curriculum). Nine credits are considered a full-time load for academic purposes. Full-time enrollment status for graduate students for all federal and state financial aid programs is defined as 12 credits per semester. Permission of the program director is required to carry more than

12 credits.

**While all academic and other requirements for the degree of Master of Science can be completed in two semesters and summer work, the maximum allowable time for the completion of all requirements and the awarding of the degree is five years from the date of first matriculation (exclusive of time spent in the armed forces), unless the associate dean approves an extension.*

The maximum allowable time for the completion of all requirements for the doctoral degree is eight years from the date of first matriculation unless the associate dean approves an extension. Any course outside the time limit will not count as credits toward the degree unless approved in writing by the appropriate program director and associate dean.

Changes on Academic Records

Students have until the time of their graduation to have changes made to their academic records. Once a student has graduated, the academic record is frozen and cannot be changed retroactively.

GRADUATION REQUIREMENTS

Master of Science students may elect either a Thesis Option or Non-Thesis Option (see below). Doctoral students should consult the program for the Plan of Study (see Graduate Curriculum).

The responsibility for properly fulfilling the requirements for degrees rests entirely with the student. Students generally meet the requirements announced in the graduate section of the LIU Pharmacy Bulletin for the academic year in which they were matriculated or readmitted. Students for whom graduation requirements change during their progress to a degree may, with the permission of the Associate Dean, choose requirements in effect at the time of admission or those in effect at the end of the course of study.

Exceptions to the provisions of this section of this bulletin may be made only with the prior written sanction of the associate dean on the recommendation of the appropriate program director.

Thesis Option

1. Completion, with a minimum cumulative GPA of 3.000, the required curriculum in the designated area of specialization, and 6 credits of research and thesis.
2. Completion of a Master's Thesis which demonstrates the candidate's ability to select, organize and present the results of investigations in his or her field of specialization. The following general information is intended for the student's guidance in the preparation of the thesis:
 - The student should have completed at least 12 credits toward the degree before submitting a proposal.
 - The student should obtain the latest copy of Supplementary Information and Suggestions Concerning the Master's Degree Thesis and Proposal from the Office of Graduate Studies.
 - The approval of the program director must be obtained for the thesis after the submission of the proposal.
 - The sponsoring committee must consist of three members of the graduate faculty of whom two must be from the full-time graduate faculty. The chair of the committee may be selected by the student or appointed by the program director.
 - The chair of the sponsoring committee supervises the student during the period of thesis preparation.
 - Upon completion of the thesis, all members of the sponsoring committee must read and approve the thesis before acceptance.
 - The subject of the thesis should be of significance and the completed manuscript should be representative of a high degree of

scholarly attainment.

- Students must conform to the submission dates in the thesis proposal outline and the dates given in the calendar of this bulletin.
- The student is required to make an oral defense of the thesis before the sponsoring committee.

NOTE: Thesis Option students enrolled in the M.S. in Pharmaceuticals with specialization in Industrial Pharmacy must also successfully pass a written comprehensive examination in addition to the completion of the Thesis.

Non-Thesis Option

1. Completion, with a minimum cumulative GPA of 3.000, of the required curriculum in the designated area of specialization.
2. Passing a written comprehensive examination. This examination will be given twice annually, generally in early December and late April. Dates may be obtained from the Office of Graduate Studies.

Note: Students should refer to the information on individual Master of Science programs in the Graduate Curriculum section of this bulletin for specific information and coursework requirements in each area of specialization, and for information regarding any other degree requirements that may pertain to their areas of specialization.

Comprehensive Examination for Master's Students

Passing the comprehensive exam at the master's level is required for the M.S. degree for non-thesis students enrolled in the Pharmacology and Toxicology, Pharmaceuticals with Specialization in Cosmetic Science, and Drug Regulatory Affairs programs. Passing the comprehensive exam at the master's level is required for the M.S. degree for all students (thesis and non-thesis) enrolled in the Pharmaceuticals with Specialization in Industrial Pharmacy program.

The Comprehensive Examination Process

The comprehensive examination is given twice each year, generally in early December and late April. Students should apply for the comprehensive exam in their final semester. Students should contact the coordinator of graduate programs for forms, application deadlines and examination dates.

Eligibility Requirements

1. Students must have a cumulative GPA of 3.000 or above.
2. Students must be in the process of completing all of their required coursework for their degree in the semester in which they are planning to take the examination.

Passing Scores

A score of 75 or higher is required to pass the examination.

If a student has not successfully completed his/her coursework in the semester during which he/she takes the exam, he/she will have to repeat the coursework and re-take the exam.

If a student fails the exam and wants to review the exam, he/she should do so within 7 days following receipt of his score.

Reporting of the Scores

The Office of Graduate Programs shall inform students, in writing, of their scores.

APPROVED PROGRAMS

New York State Education Department Inventory of Registered Programs

Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student aid awards.

Harriet Rothkopf Heilbrunn School of Nursing

Major	Hegis Code	Degree
Adult Nurse Practitioner	1203.10	MS, ADV CERT
Family Nurse Practitioner	1203.10	MS, ADV CERT
Nursing	1203	BS

LIU Global

Major	Hegis Code	Degree
Global Studies	2210	BA

LIU Pharmacy

Major	Hegis Code	Degree
Drug Regulatory Affairs	1211	MS
Pharmaceutical Sciences	1214	Ph.D.
Pharmaceutical Studies	1211	BPS
Pharmaceutics	1211	MS.
Pharmacology / Toxicology	0409	MS
Pharmacy	1211	PharmD

Richard L. Conolly College of Liberal Arts and Sciences

Major	Hegis Code	Degree
Biochemistry	0414	BS
Biology	0401	BS
Chemistry	1905	BS
English	1501	BA
Political Science	2207	BA
Psychology	2001	BA

College of Arts, Communication and Design

Major	Hegis Code	Degree
Acting for Theatre, Film and Television	1007	BFA
Creative Writing & Publishing	1507	MFA
Film and Television	1010	BFA
Journalism	0602	BA
Media Arts	0601	BA
Writing and Producing for TV	0605	MFA

Roosevelt School

LIU Pharmacy

Major	Hegis Code	Degree
International Relations & Diplomacy	2210	BA

RocNation School of Music, Sports and Entertainment

Major	Hegis Code	Degree
Applied Music	1004	BA
Music Technology, Entrepreneurship & Production	1099	BFA
Sports Communication & Marketing	0601	BA
Sports Management	0599	BS, MS
Vocal Performance	1004	BM

School of Business, Public Administration and Information Sciences

Major	Hegis Code	Degree
Accounting	0502	BS
Artificial Intelligence	0701	BS, MS
Business Administration	5004	AAS, BBA
Business	0506	MBA
Computer Science	0701	BS, MS
Data Analytics	0703	BS, MS
Entrepreneurship	0501	BS
Finance	0504	BS
Health Administration	1202	MPA
Marketing	0509	BS
Public Administration	2102	MPA

School of Education

Major	Hegis Code	Degree
Adolescence Inclusive Education	0803	MSEd
Applied Behavior Analysis	2099	Adv. Cert.
Bilingual Education	0899	Adv. Cert.
Childhood Education: 1st Initial	0802	BS, MSEd
Childhood / Early Childhood Education: Birth-Grade 2, Childhood Grade 1-6	0802	MSEd
Early Childhood Education: Birth-Grade 2	0802	MSEd, Adv. Cert.
Inclusive Early Childhood Education IECE (dual initial certification)	0808	BS
School Psychologist	0826	MSEd
Teaching Children with Disabilities: 1st Initial	0808	MSEd

School of Health Professions

Major	Hegis Code	Degree
Clinical Psychology		PhD
Diagnostic Medical Sonography	1225	BS
Exercise Science	1201	MS
Exercise Science and Wellness	1299	BS

Forensic Social Work	2104	Adv.Crt.
Health Sciences	1201	BS
Marriage and Family Therapy	2104	Adv.Crt./MS
Mental Health Counseling	2104	Adv.Crt/MS
Occupational Therapy	1208	BS / MS
Physical Therapy	1212	DPT
Physician Assistant Studies	1299.1	MS
Public Health	1214	MPH
Psychology		MA
Respiratory Care	1299	BS
Social Work	2104	BS, MSW
Speech-Language Pathology (Bilingual Extension available)	1220	MS

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