



st. john's

UNIVERSITY

N E W Y O R K
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**ST. JOHN'S COLLEGE OF
LIBERAL ARTS AND SCIENCES**

SCHOOL OF EDUCATION

**THE PETER J. TOBIN
COLLEGE OF BUSINESS**

**COLLEGE OF PHARMACY AND
ALLIED HEALTH PROFESSIONS**

**COLLEGE OF
PROFESSIONAL STUDIES**

QUEENS
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OAKDALE, NY 11769
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(718) 990-6114

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QUEENS CAMPUS

Robert A. Mangione, B.S. Phm., M.S., P.D., Ed.D.,
Dean

Joseph M. Brocovich, B.S. Phm., Pharm.D.,
Associate Dean

Sr. Laura M. Arvin, O.P., B.A., M.A.,
Assistant Dean

Joseph V. Etzel, B.S. Phm., Pharm. D.,
Assistant Dean

John-Emerý Konecni, B.S., M.A., Ph.D.,
Assistant Dean

Janet E. Carl, B.A., M.S., P.D.,
Assistant to the Dean

Veronica M. Novy, B.S., M.S.,
Assistant to the Dean

Camille C. Pacia, B.A., M.S.,
Assistant to the Dean

Mission Statement

The College of Pharmacy and Allied Health Professions commits to academic excellence, scholarship and service to humanity through the discovery and application of biomedical knowledge.

We facilitate and advance scholarship by offering innovative programs of study utilizing active learning approaches that are student-centered, outcomes-oriented and that inspire life-long learning.

As compassionate health care professionals and scientists, we serve humanity through our dedication to excellence in health care and biomedical research. Building on a commitment to cultural diversity and benefiting from our metropolitan location and strategic alliances with the leading health care institutions, we strive to serve as effective leaders, good citizens and moral and ethical individuals.

We commit ourselves to the discovery, communication and application of biomedical knowledge as a critical component for the development of health care professionals and scientists. Through innovative basic, social and clinical research initiatives, we contribute to scientific knowledge, address contemporary health care issues and seek solutions to health care problems.

Our mission embodies the principles of the University's mission statement: to provide a quality education in an environment that is Catholic, metropolitan and Vincentian.

Objectives

The College of Pharmacy and Allied Health Professions seeks to prepare students to meet the present and future demands for pharmacists, physician assistants, medical technologists, toxicologists, cytotechnologists and pathologist assistants, to qualify them for their responsibility in matters of public health, to make them conscious of the opportunity to serve their fellow man, to emphasize the highly specialized professional service rendered to and for members of the other professions as well as to the public, to instill in the

students appreciation of the ever-changing character of the health professions, to provide an opportunity for broad general education and to inspire students to pursue graduate study in specialized fields of interest.

The College of Pharmacy and Allied Health Professions has adopted the following Vision Statement: The College of Pharmacy and Allied Health Professions will be a nationally recognized model of distinctiveness for the preparation of exemplary health care providers dedicated to meeting the needs of all patients particularly the medically underserved in urban areas, distinguished scholars and leading researchers in the pharmaceutical and biomedical sciences.

The following objectives are emphasized in our various programs:

Pharmacy Program:

Fundamental scientific principles as they apply to therapeutic agents to help students to better understand and predict the nature and biological activity of drugs;

Familiarization with the business principles and legal requirements of pharmacy

Opportunity for clinical instruction and experience recommending and assessing of rational drug therapy

Provision of knowledge to meet professional demands for participation of the pharmacist as a vital member of the health care team

Medical Technology Program:

Education of students in clinical laboratory sciences

Provision of a strong foundation in basic sciences and practical experience in clinical laboratories

Participation in national, state and local professional and health oriented organizations

Toxicology Program:

Provision of fundamental training in toxicology

Provision of a practical opportunity for entering this field

Providing prospective employers in the pharmaceutical, chemical, environmental and health care industries with a pool of trained, knowledgeable personnel

Pathologist Assistant Program:

Preparation of professionals to assist in the work of anatomic pathology

Promotion of professional training, recognition and competence

Provision of an available pool of trained, knowledgeable health professionals for a wide variety of research and clinical careers

Physician Assistant Program:

Preparation with qualified academic and clinical training

Provision of primary health care services

Provision of trained personnel to practice in a physician's office, hospital or other medical setting

Specific Entrance Requirements

16 High School Units or appropriate score on GED

English	4
History	1
Science	1*
Foreign Language	2
Mathematics	3
Electives	5

At least three electives must be from the academic grouping

*While the above are the basic admission requirements, it is suggested that students who intend to matriculate for the Pharm.D. degree include chemistry, biology and physics in their high school programs.

Applicants holding a GED are generally not eligible for admission to the Pharm.D. Program.

Admission Requirements

Candidates for admission to the pharmacy program must be at least 16 years of age and must be graduates of a four year secondary school accredited by the New York State Education Department. A high school average of 85 and an SAT score of 1100 (minimum 550 math, and 450 verbal) is desired for entrance into the Pharm.D. program. No student who, because of academic or disciplinary reasons, has been dismissed from or has been placed on probation in another school is eligible for admission to the College of Pharmacy and Allied Health Professions. Completion of the non-professional requirements at any other accredited college or university does not automatically permit entry to the professional program. Due to the available facilities and faculty, enrollment is limited. Allied health admissions standards are those of the University.

Admission to Advanced Standing

A student transferring from another college or university must present the following:

1. A statement of honorable withdrawal.
2. An official transcript of high school and college records.
3. A marked copy of the catalog of the college or university attending showing courses for which credits are sought.

All students must have a minimum overall grade point average of 3.0 to be considered for admission.

Transfer students must meet University requirements in the areas of Philosophy and Theology.

Candidates for the Medical Technology Program, the Physician Assistant Program, the Toxicology Program, the Cytotechnology Program and the Pathologist Assistant Program must meet the University requirements for Admission to Advanced Standing. Credit for comparable courses

in the pre-professional sequence will be granted. No credit is allowed for professional courses taken in other than an affiliated institution.

Transfer students into the Physician Assistant Program are accepted on a space available basis, by vote of the admissions committee and only after completion of a personal interview.

Programs of Study

The pre-professional years in the following programs are coordinated with those of other departments of the University. This arrangement gives the student the valuable advantages of a broadening influence resulting from close contact with students and faculty of several schools in the University.

Degrees and Majors Available

DOCTOR OF PHARMACY PROGRAM

The entry-level Doctor of Pharmacy (Pharm.D.) degree is designed to develop students into competent pharmacists who possess the knowledge and skills needed to provide the highest quality of pharmaceutical care. This curriculum provides students with a strong foundation in the liberal arts and sciences that is consistent with a strong academic program of study. The program is configured as a six-year course of study that admits students directly into the major without requiring the completion of a pre-pharmacy curriculum. Professional pharmacy coursework is introduced early in the program to increase the students' awareness of their chosen profession. The final four years concentrate on integrating basic and applied pharmaceutical and clinical sciences in both the classroom and practice settings. The curriculum employs an integrated approach to learning, and stresses the application of knowledge that is patient specific and focused.

Graduates of this program are prepared to meet the challenges associated with becoming an effective practicing pharmacist and serve as experts on drug therapy to improve the use of medication for diverse populations.

PHYSICIAN ASSISTANT PROGRAM

The four year program leading to a Bachelor of Science degree with a major in Physician Assistant consists of two academic years of collegiate instruction at the University, followed by 24 months at the St. Vincent Catholic Medical Centers (Staten Island Region at the Bayley Seton Campus or the St. Anthony Institute of Nursing and Health Professions) or Bronx Lebanon Hospital Physician Assistant Program. These accredited programs provide the Physician Assistant Professional Credential concurrently with the conferral of the B.S. degree from St. John's University.

Students are reviewed annually for the purpose of evaluating performance in the academic program and ascertaining eligibility for promotion into the clinical portion of the program. Promotion into the clinical portion requires a 3.0 GPA both overall and in mathematics and science and successfully completing the hospital admission process.

Because each of the affiliated hospitals has slightly different requirements, every first year

student should visit with each hospital program during the first semester at the University and should become informed about particular requirements.

MEDICAL TECHNOLOGY PROGRAM

The four year program leading to the Bachelor of Science in Medical Technology degree consists of three years of pre-professional and professional study at the University and one calendar year of study at either campus of the St. Vincent Catholic Medical Centers (Queens or Manhattan) or New York Methodist Hospital.

A student's completion of the entire program leading to the B.S. in Medical Technology depends upon the completion of the clinical year at the hospital. Promotion to the hospital is influenced strongly by the student's academic performance and admission is competitive. Students should consult with the Dean's office each semester before entering the junior year.

PATHOLOGIST ASSISTANT PROGRAM

The four year program leading to a Bachelor of Science degree with a major in Pathologist Assistant consists of three academic years of collegiate instruction at the University, followed by one calendar year of study at either campus of the St. Vincent Catholic Medical Centers (Queens Region).

Students are evaluated on their performance in the academic program and eligibility for promotion to the clinical portion of the program. Admission to the hospital is competitive and is based on grade point average and successful completion of the hospital admission process.

TOXICOLOGY PROGRAM

Toxicologists work to protect human health and the environment from the adverse effects of chemicals. Toxicology students take courses in chemistry, biology, physiology, and pharmacology in addition to diverse courses in toxicology. Students can participate in on-campus activities such as undergraduate research in a professor's laboratory or become involved in the Toxicology Club.

The Toxicology Program is a four-year program providing a minor in chemistry. This major provides all of the requirements for admission to medical school. After graduation, students are qualified for jobs in biomedical or analytical laboratories as well as admission to medical school and graduate school.

CYTOTECHNOLOGY PROGRAM

This four-year program leading to the Bachelor of Science degree with a major in Cytotechnology consists of three academic years of collegiate instruction at the University, followed by a calendar year of instruction at the New York Medical College School of Cytotechnology.

Students are evaluated on their performance in the academic program and eligibility for promotion to the clinical portion of the program. Admission to the hospital is competitive and is based on grade point average and successful completion of the hospital admission process.

Special Programs

OPTIONAL PROGRAM

The College cooperates with the Office of Special University Programs in offering the Self-Pace Program which allows a student in some majors to participate in a program of study offering additional academic support that is mutually agreed upon after testing and counseling. This may involve utilizing the summer sessions immediately following graduation from high school and subsequent summer sessions following completion of the regular academic year. Students must apply for admission to the professional programs after completing the Self-Pace Program.

CONTINUING PROFESSIONAL EDUCATION

The Office of Continuing Professional Education's core activities are directed toward providing pharmacists and allied health professionals with the opportunities to increase their knowledge and skills with value based programs that contribute to their professional achievement. Seminars cover a wide variety of topics including therapeutics, managed care, administration and industrial development, and address topical concerns of the practicing pharmacist. Where appropriate, these programs are submitted for approval to the various states requiring continuing education credits for relicensure. A yearly highlight is the Dr. Andrew J. Bartilucci Pharmacy Congress, which attracts over 300 practitioners from all areas of pharmacy practice. For more information regarding programs, the office may be reached by phone at (718) 990-5796 or e-mail at pharmacyce@stjohns.edu

Accreditation

The Doctor of Pharmacy degree program is accredited by the American Council on Pharmaceutical Education. The College also holds membership in the American Association of Colleges of Pharmacy and the American Society of Allied Health Professions.

The Medical Technology Program is approved by the National Accrediting Agency for Clinical Laboratory Sciences.

The Physician Assistant Professional Program at the affiliated hospitals are accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).

Attendance

Regular and prompt attendance is expected in all professional and non-professional courses, but is an individual responsibility. Students are responsible for all announced tests and for submitting at the proper time all assignments given in class.

If a student in an experiential course has any unexcused absence in any one module, a failure will result, and the module must be repeated.

Faculty members have discretionary power to determine whether a student who missed an announced test is to be given a make-up examination.

Final examination make-up examinations are offered upon the approval of the Dean's office.

Science laboratories are not included under this general policy. Students are required to attend all laboratory sessions unless excused for suitable reasons.

English as a Second Language

(See ESL under Admissions.)

Pass-Fail Option

This option is open only to Allied Health Professions students who have completed the freshman year and who have a current quality point index of at least 2.0. It is limited to one course per semester for a four year degree program, the total during the three years, including summer sessions, may not exceed six. It may not be exercised in connection with major requirements or with courses being applied to a minor. The quality point index will not be affected, however, a "Pass" will be credited toward the degree.

Application for the Pass-Fail Option must be made in the College of Pharmacy and Allied Health Professions Dean's Office. A student may elect the Pass-Fail Option at any time during the semester up to and including the last date designated for withdrawal from class without academic penalty. Pharm.D. students do not have the Pass-Fail option except in courses already designated as Pass-Fail.

General Scholastic Programs

A student's program may range from a minimum of 12 to a maximum of 18 hours (or credits) per semester.

A minimum quality point index of 2.0 must be maintained in both the major field of concentration and all courses cumulatively.

For graduation, 2.0 minimum indices in the major and in all courses cumulatively are required.

The entry-level Pharm.D. degree requires an overall grade point average of 2.3 by the end of the first year which must be maintained throughout the remaining years of the program.

Refer to Promotion Section for Medical Technology and Physician Assistant Programs.

Advanced Placement/CLEP

Upperclass students who wish to take CLEP or other credit-by-test exams must receive prior approval from the Office of the Dean if such credit is to be applied to the St. John's degree.

Promotion

Recommendations for promotion, promotion on probation, or dismissal for poor scholarship are made by the Committee on Academic Standing. Attendance at a Study Skills Workshop may be a condition of probation for freshmen on probation. Written appeal for reconsideration must be addressed to the Committee on Academic Standing. In addition, a student on probation may be asked to repeat all professional courses with a grade below "C" before the student is permitted into the next year.

A student may not advance into the senior year of the Medical Technology Program below a 2.5 cumulative grade point average, Toxicology Program below a 2.0 cumulative grade point average, and Pathologist Assistant program below a 2.75 cumulative grade point average. Students may not progress into the fourth year of the

Cytotechnology Program or the third and fourth years of the Physician Assistant Program unless all prerequisite courses are satisfied and the grade point average is 3.0 both overall and in math/science.

Good academic standing for a student in the Entry Level Pharm.D. degree is a 2.3 cumulative grade point average by the end of the first year.

A pharmacy major will be required to successfully complete a competency examination no later than the end of the Fall semester of the 5th year of the program.

Regulations on Discipline

New York State law provides for suspension or revocation of a license to practice the healing arts if, among other things, an individual is convicted of a crime or is a habitual drinker or has been addicted to, dependent on, or a habitual user of narcotics, barbiturates, amphetamines, hallucinogens, or other drugs having similar effects. In light of this statute, any student who, after appropriate procedures, is found to have violated University regulations and policies relating to drugs may be subject to dismissal from the College or be required to undergo rehabilitation before continuing progress toward a degree.

The Dr. Andrew J. Bartilucci Health Education Resource Center (HERC)

The Dr. Andrew J. Bartilucci Health Education Resource Center (HERC) is open weekdays in St. Augustine Hall B22. This instructional resource center provides educational and technical services to support the course objectives of the College of Pharmacy and Allied Health Professions. These services include: general references, textbooks, periodicals, faculty notes, computerized bibliographic services, video cassettes, slide programs, closed circuit television, photography and computerized slide production. The Center is available for the use of students, faculty, alumni and practitioners.

Special Requirements for Experiential Programs

Pharmacy students participating in experiential programs are required to have a medical examination, an immunization series, health insurance, accident and sickness insurance. Additionally, these students must purchase malpractice and/or liability insurance through the University, and must complete PHR 5000.

No elective or didactic course may be taken concurrently with the advanced experiential courses.

In the Medical Technology, Physician Assistant, Cytotechnology and Pathologist Assistant Programs, students entering the hospitals for the professional years are required by the hospital to have a medical examination and to carry adequate accident and health insurance for the duration of their professional studies.

Pharmacy, Medical Technology, Physician Assistant, Cytotechnology and Pathologist Assistant program students must register at the University for each semester that they are at the hospital and pay full tuition. No partial credit is given to anyone not completing off campus experiences in the allied health programs.

Pharmacy Intern Permit

Students who progress to the fourth year and who expect to qualify by examination for licensure in New York State are required to obtain a Pharmacy Intern Permit, valid for a period of five years. Completed applications that have been signed by a College administrator may be forwarded by the student to the Board of Pharmacy after completion of the third year of the program. The permit is also required of students who participate in the advanced experiential rotations at New York State sites.

Admission to the Practice of Pharmacy

The Pharmacy program offered by the College of Pharmacy and Allied Health Professions meets the educational requirements for admission to state licensing examinations. Each state requires, in addition to academic work, a period of internship. When these and other requirements which have been established by the State have been met, the applicant is admitted to the state licensing examination. Successful candidates are granted a license to practice.

New York State participates in registration of licenses by endorsement with all states which have full memberships in the National Association of Boards of Pharmacy.

For information concerning the admission to the practice of pharmacy, write: 89 Washington Avenue, 2nd Floor, Albany, NY 12234.

Registry of Medical Technologists

The graduate of the Medical Technology Program receives, in addition to a diploma from St. John's University, a Professional Certificate from the hospital. The Registry of Medical Technologists of the American Society of Clinical Pathologists (ASCP) conducts examinations twice a year for properly qualified candidates. A candidate who successfully passes the Registry examination is "registered" and entitled to use the initials "M.T. (ASCP)" after his/her name.

For further information regarding the Registry, write to: Registry of Medical Technologists, American Society of Clinical Pathologists, 2100 West Harrison Street, Chicago, IL 60612.

The National Certifying Agency also conducts examinations twice a year for properly qualified candidates. A candidate who successfully passes the Certifying Examination is "certified" as a clinical laboratory scientist [CLS (NCA)].

For further information contact: National Certifying Agency, 2021 L. St. N.W., Suite 400, Washington, D.C. 20036.

Certification of Physician Assistant

Successful completion of the professional component of Physician Assistant Education as provided above, makes the graduate eligible for admission to the Physician Assistant National Certifying Examination as administered by the National Commission on Certification of Physician Assistants.

Affiliate Clinical Pharmacy Preceptors

ANNADALE FAMILY PHARMACY

Ms. Jeneane Chirico, R.Ph.
Ms. Stefanie Vitale, R.Ph.

AVANTI HEALTH CARE

Mr. Pietro Piacquadio, R.Ph.
Mr. Richard Tinger, R.Ph.
Mr. Joseph Stanilewicz, R.Ph.

B & E PHARMACY

Mr. Bruce Snipas, R.Ph.

BARKER'S PHARMACY & COMPOUNDING

Mr. Ray Gurriere, Jr., R.Ph.

BELLE HARBOR CHEMISTS

Ms. Deana Ferranti, R.Ph.
Mr. Richard Longo, R.Ph.

BETH ISRAEL MEDICAL CENTER-PETRIE CAMPUS

Dr. Sharon See, R.Ph.
Dr. Tina Kanmaz, R.Ph.
Mr. Anthony D'Alessandro, R.Ph.
Mr. Michael Inzerillo, R.Ph.
Dr. Deborah Wible, R.Ph.

BETH ISRAEL MEDICAL CENTER-KINGS HIGHWAY DIVISION

Mr. George Ziterell, R.Ph.
Ms. Janemarie Viscardi, R.Ph.
Mrs. Georgia LaFauci, R.Ph.

BETH ISRAEL MEDICAL CENTER-NORTH

Ms. Sylvia Thomas, R.Ph.
Mr. Thomas Meere, R.Ph.
Ms. Maureen Sullivan, R.Ph.
Ms. Yvonne Laureano, R.Ph.
Mr. John Sang, R.Ph.

BONUS DRUGS & SURGICALS

Mr. Nicholas Simone, R.Ph.

BROOKHAVEN MEMORIAL HOSPITAL

Mr. Peter Cerone, R.Ph.
Dr. Ken Cohen, R.Ph.

THE BURKE REHABILITATION HOSPITAL

Dr. Thomas Grandville, R.Ph.
Mr. Anthony Maddalena, R.Ph.

CABRINI MEDICAL CENTER

Dr. Peter Barber, R.Ph.
Mr. Anthony Totillo, R.Ph.
Mr. David Jow, R.Ph.

CALVARY HOSPITAL

Ms. Debra Laboy, R.Ph.

CARROLL COURT PHARMACY

Mr. Gerard Chirico, R.Ph.

THE CHARLES PHARMACY

Mr. Roy Eisner, R.Ph.
Ms. Dava Eisner, R.Ph.

CLINTON APOTHECARY

Mr. Nick Niceforo, R.Ph.

CONEY ISLAND HOSPITAL

Mr. Thomas Scuto, R.Ph.
Ms. Holly Koffler-Wooley, R.Ph.
Dr. Michael Thomas, R.Ph.

CVS (BAYSIDE)

Ms. Carmen Parraga, R.Ph.

CVS PHARMACY (EAST HILLS)

Mr. Marc Rabbani, R.Ph.
Mr. John Pace, R.Ph.

CVS (GREENWICH)

Ms. Tina Lum, R.Ph.
Ms. Annette Iannucci, R.Ph.

CVS/PEOPLE'S DRUG # 1952 (MINEOLA)

Ms. Zina Khoudaker, R.Ph.
Mr. Frank Nania, R.Ph.

CVS/PEOPLE'S DRUGS (NY)

Mr. Ira Hecht, R.Ph.

CVS (STATEN ISLAND & NJ)

Mr. Syed Hussain, R.Ph.

DALE DRUGS

Ms. Maria Longo-DeVivo, R.Ph.
Mr. Bobby DeVivo, R.Ph.

DEFRANCO PHARMACY

Mr. Anthony DeFranco, R.Ph.
Ms. Kathleen Carroll, R.Ph.
Mr. James DeFranco, R.Ph.

DRUGS PLUS

Ms. Carlene Lucarrelli, R.Ph.
Ms. Maria Commisso, R.Ph.

DUANE READE ELMONT

Ms. Parastou Nouri, R.Ph.
Ms. Maria Aparicio, R.Ph.

DUANE READE # 451 (FRANKLIN SQUARE)

Ms. Noelle Ryan-Bloom, R.Ph.

DYKER HEIGHTS PHARMAY

Mr. John Cordi, R.Ph.
Mr. Gregg Hinderstein, R.Ph.

ECHO DRUGS/SURGICAL SUPPLIES

Mr. Boris Mantell, R.Ph.
Mr. Michael Gleit, R.Ph.
Mr. Larry Michaels, R.Ph.

JACK D. WEILER HOSPITAL OF THE ALBERT EINSTEIN COLLEGE OF MEDICINE

Mr. Royston Browne, R.Ph.
Dr. Angela Cheng, R.Ph.
Dr. Yvonne Gayle, R.Ph.
Mr. James McCarthy, R.Ph.
Dr. Frank Aroh, R.Ph.

ELMHURST HOSPITAL CENTER

Ms. Jia Lau, R.Ph.
Ms. Chuhyun Myong, R.Ph.
Ms. Mirlen Arteaga, R.Ph.
Mr. Mohammad Ghauri, R.Ph.
Ms. Mena Stamatou, R.Ph.
Ms. Suk Wong, R.Ph.
Ms. Hee Cho, R.Ph.
Mr. Tony Diep, R.Ph.
Mr. Naeem Quershi, R.Ph.
Mr. Jeh-Hong Lin, R.Ph.
Mr. Manish Kaneria, R.Ph.
Ms. Gaeta Kumar, R.Ph.
Mr. Henry Lau, R.Ph.
Ms. Kalliopi Toumazou, R.Ph.
Ms. Faina Iskhakova, R.Ph.
Ms. Angela Wong, R.Ph.
Ms. Josephine Troncoso, R.Ph.

ELMHURST PHARMACY, INC.

Mr. Mohammad Uddin, R.Ph.

FINCH PHARMACY

Mr. Salvatore Scalisi, R.Ph.

FRANKLIN SQUARE PHARMACY

Mr. Joseph LiPera, R.Ph.
Mr. Thomas D'Angelo, R.Ph.
Mr. Frank Fata, R.Ph.
Mr. Alfred Corrado, R.Ph.

FRANWIN PHARMACY

Mr. Joel Sheriff, R.Ph.
Ms. Janet Borukhov, R.Ph.
Mr. Joseph Gregson, R.Ph.

GENOVESE PHARMACY (MELVILLE)

Mr. Nick Aloji, R.Ph.

GENOVESE DRUG STORE (WEST HEMPSTEAD)

Ms. Chandine Persaid, R.Ph.
Ms. Mariealena Colucci, R.Ph.

GOOD SMARITAN HOSPITAL

Dr. Amanda Hastings, R.Ph.

GREAT NECK CHEMISTS

Mr. Joseph Wing, R.Ph.
Mr. Mark Kassman, R.Ph.
Mr. Frank Longo, R.Ph.

GREATER NEW YORK HOSPITAL ASSOCIATION

Dr. Cindy Fong, R.Ph.
Mr. Joseph Mislouack, R.Ph.
Dr. Elizabeth Shlom, R.Ph.

GREENWICH HOSPITAL

Mr. Robert Rosum, R.Ph.

GUARDIAN CONSULTING SERVICES, INC.

Dr. Maria Toscano, R.Ph.
Ms. Athanasia Kournpoulos -Tsiantouris, R.Ph.
Ms. Evridiki (Vicki) Goulimis-Poulos, R.Ph.
Ms. Kelly Sanfilippo, R.Ph.
Ms. Miriam Ellison, R.Ph.
Mr. William Hallett, R.Ph.
Ms. Lisa Peerman-Brandl, R.Ph.

HACKENSACK UNIVERSITY MEDICAL CENTER

Dr. Arpi Kuyumjian, R.Ph.
Dr. Keri Bicking, R.Ph.
Dr. Jennifer Bui, R.Ph.
Mr. Nilesh Desai, R.Ph.

HARRISON CHEMISTS

Mr. Larry Consentino, R.Ph.

HEALTHCARE RESOURCES

Ms. Rita Amigdalos, R.Ph.

HEALTH SMART PHARMACY

Mr. Tullio Bruno, R.Ph.
Mr. Frank Riccardi, R.Ph.
Ms. Nancy Bell, R.Ph.
Dr. Michael O'Dowd, R.Ph.

HILL PHARMACY (65 PLACE)

Mr. Mark Fotakis, R.Ph.

HOLBROOK PHARMACY AND SURGICAL

Mr. John Zaoutis, R.Ph.
Mr. Anthony Catanese, R.Ph.

HOSPITAL FOR SPECIAL SURGERY

Mr. Mark Arrington, R.Ph.
Ms. Tina Yip, R.Ph.
Mr. Tony Siu, R.Ph.
Ms. Vanessa Jeffrey, R.Ph.

HUNTINGTON HOSPITAL

Dr. Anna Dushenkov, R.Ph.
Ms. Sheri Bedell, R.Ph.
Mr. Bill Hendricks, R.Ph.
Ms. Kristine LaMonica, R.Ph.
Ms. Mary Cronin, R.Ph.
Ms. Catherine Kim, R.Ph.
Mr. Kevin Mahoney, R.Ph.
Mr. Jack Mateyunas, R.Ph.

HYLAN MEDICINE CABINET

Mr. John Candela, R.Ph.
Mr. Lou Magnoti, R.Ph.

JACOBI MEDICAL CENTER

Mr. Brian Dwarka, R.Ph.
Mr. Brain Connolly, R.Ph.
Ms. Maureen Zullo, R.Ph.
Ms. Elaine Hassan, R.Ph.
Mr. Joseph Alongi, R.Ph.
Ms. Gloria Lee, R.Ph.
Mr. Hugh Boothe, R.Ph.

JAMAICA HOSPITAL MEDICAL CENTER

Mr. James McHugh, R.Ph.
Mr. Wing Choi, R.Ph.
Mr. Philip Hui, R.Ph.
Ms. Marjorie Noel Alvarez, R.Ph.
Ms. Roxanna Loncke, R.Ph.
Mr. Louis Kaplan, R.Ph.
Ms. Carolina Roca, R.Ph.
Mr. Gary Gelfand, R.Ph.
Ms. Hena Montalbo, R.Ph.
Mr. Billy Diep, R.Ph.
Mr. Nick Pantaleo, R.Ph.
Mr. Michael Derderian, R.Ph.
Ms. Umezuruike Umenta, R.Ph.
Mr. Herb Rosenblum, R.Ph.
Mr. Myth Robinson, R.Ph.
Mr. Byan Prechtl, R.Ph.
Ms. Eileen Halvatzis, R.Ph.
Mr. Louis Cosenza, R.Ph.
Mr. Frank Tang, R.Ph.
Mr. Kenneth Connelly, R.Ph.
Mr. Neil Arak, R.Ph.
Mr. Frank Tang, R.Ph.
Mr. Raymond Murphy, R.Ph.
Ms. Eileen Halvatzie, R.Ph.

JAYSON DRUGS

Mr. James Ehrlein, R.Ph.

THE JEWISH HOME AND HOSPITAL

Ms. Rosina Stamati, R.Ph.

KING KULLEN PHARMACY #11

Mr. Gary Corn, R.Ph.
Dr. Maria Sulli, R.Ph.

KINGS LONG BEACH, INC.

Mr. Jay Kirshner, R.Ph.

KINGS PHARMACY (MANHATTAN)

Mr. Jay Krishner, R.Ph.

LENOX HILL HOSPITAL

Dr. Allan Krasnoff, R.Ph.
Ms. Janis Kucich, R.Ph.
Ms. Sinsook Ye, R.Ph.
Dr. Alan Caspi, R.Ph.

LIBERTY DRUGS

Mr. Simon Lorberg, R.Ph.

LONG ISLAND COLLEGE HOSPITAL

Dr. Yuliya Gilshteyn, R.Ph.
Mr. Warren Lakeoff, R.Ph.

LONG ISLAND JEWISH HOSPITAL

Mr. George Nathan, R.Ph.
Mr. Kenneth Sokol, R.Ph.
Mr. Greg Scott, R.Ph.
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Awards and Honors

Recipients of honors and awards are determined by the faculty and Dean of the College of Pharmacy and Allied Health Professions.

American Pharmaceutical Association Academy of Students of Pharmacy (APhA-ASP) Mortar and Pestle Professionalism Award—This award is presented to a graduating pharmacy student who exhibits the ideals of professionalism and excellence in patient care, has demonstrated exceptional service and commitment to the profession of pharmacy and is in good academic standing.

American Pharmaceutical Association Certificate of Recognition—This award is offered by the American Pharmaceutical Association to the graduating Pharmacy student who has rendered outstanding performance on behalf of the Student Chapter of the American Pharmaceutical Association.

ASHP Student Leadership Award—The criteria established by The American Society of Health System Pharmacists for this award are: The student will have demonstrated an interest in institutional pharmacy practice. Examples include enrollment in a clinical or hospital pharmacy course or work experience in an institutional setting. The student should be involved in professional pharmacy organizations, either student groups, state societies, or national associations. The student should have leadership experience within these groups. The student shall be capable academically by ranking in the upper one-half of his or her class and will be an undergraduate student enrolled in the College of Pharmacy. Special consideration should be given to students in their next-to-last year of school.

Auxiliary of the Pharmacists' Society of the State of New York Scholarship—A fourth year pharmacy student is selected to receive a monetary scholarship. The student must enroll in the PSSNY (the Pharmaceutical Society of the State of New York). The candidate should have professional/campus community activities. A letter of recommendation from a faculty member and current employer must be submitted.

Aventis Scholarship—This scholarship is awarded to a qualified student with high academic excellence. Evidence of community service and financial need must be submitted.

Andrew J. Bartilucci Medical Technology Award—This award was established in 1990 to honor the Dean of the College of Pharmacy and Allied Health Professions who founded the medical technology program. It is given to a graduating medical technologist on nomination of the clinical program directors to a student who demonstrates academic excellence, college or community service and future promise of professional leadership.

Andrew J. Bartilucci Scholarship Award—was established by the Alumni Association of the College of Pharmacy and Allied Health Professions to honor a great pharmacist, professor, dean, University administrator, advisor and counselor. The criteria for this award include strong academic performance (the candidate must have a minimum grade point average of 3.0) and be in the fourth year of the program for consideration. Evidence of strong leadership, demonstrated commitment to the profession of pharmacy, evidence of community service and financial need.

CVS Pharmacy Scholarship—Criteria for selection includes a fourth year student who demonstrates academic excellence and a strong commitment to community pharmacy practice. An interest in chain pharmacy practice is preferable.

Ralph DePalma, Jr. Memorial Scholarship Award—This award which is sponsored by The Royal Counties of New York Society of Hospital Pharmacists was established in memory of Ralph DePalma. The criteria for selection includes leadership, dedication to all aspects of the practice of pharmacy, pharmacy organization involvement, communication skills and the ability to interact in a positive way with other health care professionals. This award is given to a graduating senior.

Eli-Lilly Achievement Award—A gold medal is awarded by Eli-Lilly and Company to a pharmacy graduate who has displayed superior scholastic and professional achievement, desirable qualities of professional leadership and ethical conduct.

Facts and Comparisons—Award for Excellence in Clinical Communications—Recipient must be in top 25% of his or her class and have outstanding clinical communication skills.

Glaxo SmithKline, Patient Care Award (formerly Smith Kline Beecham Award)—A plaque is awarded by Smith Kline Beecham Laboratories to a graduating senior for superior achievement in clinical pharmacy. The student must have demonstrated superior knowledge in drug use, skill in clinical techniques and must have contributed significantly to improved patient care.

Health Professions Award—Given to the allied health major who has, in the opinion of both the College and the hospital faculty, demonstrated academic excellence, service to college and community and future promise of professional leadership.

Indo-American Pharmaceutical Society Award—Two monetary scholarships are awarded. The first award is given to a fourth year student of Indian heritage with excellent grades. The second award is open to all fourth year students.

JM Long Foundation Scholarship Award—a monetary award is presented to a deserving fourth or fifth year student planning to practice in the retail community setting.

The Bruce Kay Memorial Award of Merit-Sponsored by Pfizer—this award is granted to a graduating student from the College of Pharmacy and Allied Health Professions. The student will have demonstrated excellence in both didactic and clinical course work by maintaining a grade point average of no less than 3.0. A written essay must be submitted for consideration.

The Herb and Patricia Kett Scholarship—Sponsored by the National Association of Chain Drug Stores, provides a \$500 annual award to a fifth year pharmacy student. The award is based on scholastic achievement and financial need (student must file an FAF) and is for a student who plans to enter community practice.

Korean American Pharmaceutical Association Award—The criteria for this award include high academic excellence. The student must be of Korean heritage.

Long Island Pharmacist Society, Inc. Award—This scholarship is awarded to a fifth year student in the undergraduate program. The candidate must be involved in socio-professional organizations, national, state and local societies. The qualified candidate must be in good academic standing and be member of LIPS. An essay outlining an interest in community pharmacy is required.

Long Island Society of Hospital Pharmacists Award—This award is given to the student who has made an outstanding contribution to an institutional clinical pharmacy program. Basis of the award is improvement of patient care through patient-oriented pharmacy services.

Vincenzo J. Mantia Memorial Scholarship—This Scholarship was established through the generosity of the Mantia family as a memorial in honor of Vincenzo J. Mantia. Mr. Mantia was a graduate of St. John's University College of Pharmacy and Allied Health Professions (Class of 1941) who provided outstanding care as a pharmacist to his community. The recipient of this \$1,000 scholarship must be a pharmacy major who has completed the first professional year of the pharmacy program and has demonstrated superior scholastic achievement, provided outstanding community service and has financial need.

Ralph Martorana Award—Established in memory of Ralph Martorana and awarded to the student who demonstrates excellence in the Community Pharmacy Laboratory.

Merck & Co., Inc.—Awards are made to members of the graduating class (number dependent upon number in class) for excellence in their studies and particular accomplishment in the area of pharmaceuticals and pharmaceutical chemistry.

Anthony J. Monte-Bovi Award—Established by the Alumni Association in memory of Anthony J. Monte-Bovi, Professor of Pharmaceutical Chemistry. Awarded to a member of the graduating class who attains the highest average in pharmaceutical chemistry.

Mylan Pharmaceuticals, Inc. Award—A framed certificate and copy of the looseleaf edition of Drug Interactions Facts is given to a pharmacy senior who demonstrates high professional motivation and the intent to enter practice upon graduation or enter a post-entry level education and/or training program of an applied nature. The recipient must be in the top 20% of the class. An additional criterion may be superior proficiency in the provision of drug information services.

National Community Pharmacists Association (NCPA) Student Achievement Award (Sponsored by Bristol Myers Squibb)—This award is given to a fourth year student in recognition of dedication and scholastic excellence in the area of community pharmacy.

New York City Society of Hospital Pharmacists Award—A plaque is given to a pharmacy senior in New York City whose outstanding activities in the area of hospital pharmacy have been demonstrated at a hospital teaching site.

Outstanding Research Performed by a Graduating Toxicology Major Award—Awarded to a senior toxicology major for commitment to undergraduate research.

Pfizer Physician's Assistant Achievement Award—A check for \$100 is presented to the physician assistant graduate who has rendered outstanding services to the college.

Pfizer U.S. Pharmaceuticals Outstanding Leader Award—The qualified candidate should be ranked in the top 25% of the class and named on the dean's list for two semesters. Good interpersonal skills and a commitment to professional practice. Demonstrated record of accomplishment as a student leader and active participation in professional organizations.

Pharmaceutical Society of the State of New York Award—The society offers a five-year membership to the pharmacy graduate who has demonstrated continued interest in organizational work during his or her college years.

Phi Delti Chi Award—In memory of Dr. John L. Dandreaux, founder and first Dean of the College of Pharmacy, and brother Michael Iaropoli recognition is given to a pharmacy student who exhibits originality and leadership in extracurricular activities. A plaque is presented to the recipient.

Phi Lambda Sigma Leadership Award—This award is given in recognition of outstanding leadership to a student member of the society.

Physician Assistant Academic Excellence Award—Highest grade point average in the pre-clinical science program.

Rho Chi Society Research Award—Beta Delta Chapter of Rho Chi Society offers an award to a member of the graduating class who has demonstrated outstanding research ability in one of the pharmaceutical sciences.

Rho Chi Society Scholarship Award—Beta Delta Chapter of Rho Chi Society has inscribed on the Rho Chi Honor Roll the name of the graduate who receives the highest average in the professional courses. A plaque is presented to the recipient.

Rite-Aid Award—a monetary award is provided to three students who are currently employed with this organization. As a pharmacy intern, the qualified candidates must demonstrate a desire to pursue a career in retail/community pharmacy setting. The candidates must also have excellent communication and leadership skills with a financial need.

Roche Pharmacy Communication Award—Awarded to the student demonstrating effective communication with prerequisite knowledge in a form which can be received and used by the patient. In addition, the student should demonstrate a commitment to the profession and an interest in patient care, along with being congenial and compassionate toward the needs of the patient.

Alfred and Michael Seul Memorial Student Life Award (formerly The Michael Seul Memorial Student Life Award.)—This award was renamed in 2000 in honor of the father and son. The award is given to a graduating senior who has been active in University or community service.

St. Luke/St. Martin de Porres Award—A plaque is presented to a senior who best exemplifies the tradition of St. Luke and St. Martin in unselfish service to those in need of health care service, over and above curriculum requirements.

TEVA-Award—This pharmaceutical organization has made available the Outstanding Student Award Program. This is given to a graduating senior who excels in pharmacy. A personalized plaque and monetary award are provided.

Toxicologist Award—An award of \$100 and a certificate are presented to an undergraduate toxicology major for overall excellence in toxicology.

Toxicology Leadership Award—Voted by the toxicology faculty to the student who has demonstrated outstanding initiative, leadership and team-building skills while remaining in good academic standing.

Christine Veal Award—This award, in memory of a physician assistant graduate, is given to a junior, physician assistant major in good academic standing who has an exceptional grade point average and makes formal application, including an essay, to the Physician Assistant Alumni Committee.

Walgreen's Award—Established to give a deserving student a scholarship that demonstrates an interest in community pharmacy practice. Criteria for this award include academic excellence, leadership and good communication skills.

Wallace Laboratories Physician Assistant Award—A plaque is presented to a physician assistant major for excellence in academics.

Wal-Mart Scholarship Award—A monetary award is given to a student who demonstrates academic excellence and a strong commitment to community pharmacy practice.

Westchester Society of Health-System Pharmacists—A monetary award is given to a qualified candidate based on criteria established by the society. This award is open to all fourth and 5th year students.

Honor Society

The Beta Delta Chapter of the Rho Chi Society, the national pharmaceutical honor society seeking the advancement of the pharmaceutical sciences through encouragement and recognition of high scholarship and research was established at St. John's University in 1954. Pharmacy students who have achieved fourth and fifth year status, who have a cumulative quality point index of 3.5 or better and are in the top 20% of the class are eligible for nomination to membership.

Scholarships

The Office of Financial Aid has information regarding scholarships and loan programs.

Leadership Society

The Xi Chapter of Phi Lambda Sigma, a pharmacy leadership society, seeks to promote the development of leadership qualities in pharmacy students. With the fundamental assumption that leaders are made not born, the Society encourages participation in all pharmacy activities, provides opportunities for leadership development, and aids in selecting those who may wish to identify and demonstrate their leadership abilities. Pharmacy students who have achieved fourth or fifth year status, who have a cumulative quality point index of 2.5 or better and who have been nominated on the basis of their demonstration of dedication, service and leadership in the advancement of pharmacy are eligible for membership.

ENTRY LEVEL PHARM. D. PROGRAM (minimum of 20 semester hours)

The faculty expressly reserves the right to make alterations in the curriculum consistent with the needs of the profession.

FIRST YEAR

FALL SEMESTER

ENG 1000C*	3
THE 1000C*	3
CHE 1110, 1111, 1112	4
MTH 1250	3
DNY 1000C	3
CPP 1101	1
TOTAL	17

SPRING SEMESTER

ENG 1100C*	3
THE 2400*	3
CHE 1120,1121,1122	4
MTH 1260	3
PHI 1000C	3
PHR 1101	1
TOTAL	17

SECOND YEAR

FALL SEMESTER

THE 3300*	3
PHI 2240*	3
BIO 1210	3
CHE 1130, 1131, 1132	4
SPE 1015*	3
PAS 2301	1
TOTAL	17

SPRING SEMESTER

PHI 3000C	3
PAS 2201	3
BIO 1220	3
PHS 2101	3
PHS 2201	4
PHS 2301	1
TOTAL	17

*These courses will be taught both semesters

THIRD YEAR

FALL SEMESTER

PAS 3101	4
PHS 3504	3
[PHS 3505	2]
[PHS 3506	2]
PAS 3301	3
Elective	2
PAS 3102	1
PHS 3302	1
TOTAL	18

SPRING SEMESTER

PAS 3103	4
PHS 3507	3
[PHS 3508	2]
[PHS 3509	2]
PHS 3510	3
CPP 3201	2
PAS 3104	1
PHS 3303	1
TOTAL	18

FOURTH YEAR**FALL SEMESTER**

[PHR 4105	4]
[PHR 4106	3]
[PHR 4107	3]
PAS 4303	3
CPP 4301	2
PHR 4201	1
PAS 4304	2
TOTAL	18

SPRING SEMESTER

[PHR 4101	4]
[PHR 5109	2]
[PHR 4103	2]
[PHR 4104	2]
PHR 4108	2
PAS 4305	2
PHR 4202	1
CPP 4401	1
CPP 4402	2
TOTAL	18

FIFTH YEAR**FALL SEMESTER**

[PHR 5108	4]
[PHR 4102	2]
[PHR 5110	2]
[PHR 5111	2]
PAS 5202	4
PHR 5201	1
PHS 5301	2
PHR 5000+	0
TOTAL	17

[] The blocked courses will be taught sequentially.
+Course required for graduation.

SPRING SEMESTER

Module Rotations	12
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SIXTH YEAR**FALL SEMESTER**

Module Rotations	15
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There are a total of nine rotations in the entry-level Doctor of Pharmacy program. The rotations are divided in four week blocks at three credits each. A total of four rotations are completed in the spring semester of the fifth academic year and five rotations will be completed in the fall semester of sixth academic year. Of the nine rotations only the externships are required in the 5th academic year. The rotations are as follows:

REQUIRED ROTATIONS

1. CPP 5401 Institutional Pharmacy Practice Externship
2. CPP 5402 Ambulatory Pharmacy Practice Externship
3. CPP 5403 Inpatient Clerkship I
4. CPP 5407 Ambulatory Care Clerkship
5. CPP 5405 Inpatient Clerkship II

ELECTIVE ROTATIONS

1. CPP 5404 Elective Clerkship I
2. CPP 5408 Elective Clerkship II
3. CPP 5409 Elective Clerkship III
4. CPP 5410 Elective Clerkship IV

SPRING SEMESTER

CPP 6101	3
CPP 6102	3
CPP 6103	3
PHR 6101	2
Professional Elective	3
Professional Elective	3
TOTAL	17

MEDICAL TECHNOLOGY PROGRAM

(minimum of 133 semester hours)

The medical technology program continues undergoing revision. The faculty expressly reserves the right to make alterations in the curriculum consistent with the needs of the profession.

FIRST YEAR

FALL SEMESTER	CREDITS
ENG 1000C	3
MTH 1250	3
CHE 1110, 1111, 1112	4
BIO 1210,1211	4
DNY 1000C	3
TOTAL	17

SPRING SEMESTER

ENG 1100C	3
MTH 1260	3
CHE 1220, 1221, 1222	4
BIO 1220,1221	4
PHI 1000C	3
TOTAL	17

SECOND YEAR

FALL SEMESTER	
CHE 1130, 1131, 1132	4
PHY Elective	3
THE 1000C	3
PHI 2200/2240/1020	3
BIO 2280, 2281	4
TOTAL	17

SPRING SEMESTER

BIO 3460,3461	4
ALH 2101	2
THE 2200-2600	3
PHS 2201	4
PHS 2301	1
PHI 3000C	3
TOTAL	17

THIRD YEAR

FALL SEMESTER	
CHE 3250,3251	4
PHS 3504	3
PHS 3302	1
THE 3100-3600	3
SPE 1000C	3
MFL 1000C or ART 1000C	3
TOTAL	17

SPRING SEMESTER

Social Science Elective	3
PHS 3507	3
PHS 3510	3
PHS 2101	3
MFL 1100C or ART 1100C	3
HIS 1000C	3
TOTAL	18

FOURTH YEAR**FALL SEMESTER**

ALH 4141	6
ALH 4142	2
ALH 4143	2
ALH 4144	4
TOTAL	14

SPRING SEMESTER

ALH 4145	6
ALH 4146	8
ALH 4147	2
TOTAL	16

TOXICOLOGY PROGRAM

(minimum of 135 semester hours)

The toxicology program continues undergoing revision. The faculty expressly reserves the right to make alterations in the curriculum consistent with the needs of the profession.

FIRST YEAR

FALL SEMESTER	CREDITS
MTH 1220	4
CHE 1210, 1211, 1212	5
BIO 1210	3
BIO 1211	1
DNY 1000C	3
TOTAL	16

SPRING SEMESTER

MTH 1210	4
CHE 1220, 1221, 1222	5
BIO 1220	3
BIO 1221	1
ENG 1000C	3
TOTAL	16

SECOND YEAR

FALL SEMESTER	
CHE 2230, 2231, 2232	5
PHY 1610, 1611, 1612	4
PHS 3302	1
PHS 3504	3
PHI 1000C	3
TOTAL	16

SPRING SEMESTER

CHE 2240, 2241, 2242	5
PHY 1620, 1621, 1622	4
PHS 2403	3
PHS 3507	3
THE 1000C	3
TOTAL	18

THIRD YEAR

FALL SEMESTER

CHE 3250, 3251	4
PHS 3405	4
PHI 2200/2240/1020	3
ENG 1100C	3
HIS 1000C	3

TOTAL 17

SPRING SEMESTER

PHS 2201	4
PHS 2301	1
PHS 3406	4
PHS 3509	2
PHS 3510	3
THE 2200-2600	3

TOTAL 17

FOURTH YEAR

FALL SEMESTER

PHS 4401	4
PHS 4404	4
Social Science Elective	3
PHS 4302	1
MFL 1000C or ART 1000C	3
THE 3100-3600	3

TOTAL 18

SPRING SEMESTER

PHS 4403	4
MFL 1100C or ART 1100C	3
PHS 4402	4
PHI 3000C	3
SPE 1000C	3

TOTAL 17

PHYSICIAN ASSISTANT PROGRAM

(minimum of 130 semester hours)

The faculty expressly reserves the right to make alterations in the curriculum consistent with the needs of the profession.

FIRST YEAR

FALL SEMESTER CREDITS

ENG 1000C	3
MTH 1250	3
CHE 1110, 1111, 1112	4
BIO 1210	3
DNY 1000C	3

TOTAL 16

SPRING SEMESTER

ENG 1100C	3
ALH 1201	2
CHE 1120, 1121, 1122	4
BIO 1220	3
THE 1000C	3
PHI 1000C	3

TOTAL 18

SECOND YEAR

FALL SEMESTER CREDITS

CHE 1130, 1131, 1132	4
BIO 2280	4
PHS 3504	3
PHS 3302	1
PHI 2200/2240/1020	3
THE 2200-2600	3

TOTAL 18

SPRING SEMESTER

PHS 2201	4
PHS 3509	2
PHS 3507	3
PHI 3000C	3
THE 3100-2600	3
PHS 3510	3

TOTAL 18

THIRD YEAR

(42 weeks of didactic education)

SUMMER

ALH 4240	3
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TOTAL 3

FALL SEMESTER

ALH 4241	12
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TOTAL 12

SPRING SEMESTER

ALH 4242	15
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TOTAL 15

FOURTH YEAR

(52 weeks of clinical experience)

SUMMER

ALH 5240	6
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TOTAL 6

FALL SEMESTER

ALH 5241	12
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TOTAL 12

SPRING SEMESTER

ALH 5242	12
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TOTAL 12

PATHOLOGIST ASSISTANT PROGRAM

(minimum of 132 semester hours)

The faculty expressly reserves the right to make alterations in the curriculum consistent with the needs of the profession.

FIRST YEAR

FALL SEMESTER CREDITS

CHE 1110, 1111L, 1112R	4
BIO 1210	3
BIO 1211	1
ENG 1000C	3
MTH 1250	3
DNY 1000C	3

TOTAL 17

SPRING SEMESTER CREDITS

CHE 1120, 1121L, 1122R	4
BIO 1220	3
BIO 1221	1
ENG 1100C	3
PHI 1000C	3
MTH 1260	3

TOTAL 17

SECOND YEAR

FALL SEMESTER

BIO 2280, 2281	4
CHE 1130, 1131L, 1132R	4
MFL 1000C or ART 1000C	3
General Electives	3
THE 1000C	3

TOTAL 17

SPRING SEMESTER

PHS 2101	3
PHS 2201	4
PHS 2301	1
MFL 1100C or ART 1100C	3
THE 2200-2600	3
PHI 2200/2240/1020	3

TOTAL 17

THIRD YEAR

FALL SEMESTER

PHS 3405	4
BIO 3260, 3261	4
PHI 3000C	3
SPE 1000C	3
PHS 3405	3
PHS 3302	1

TOTAL 18

SPRING SEMESTER

PHS 3510	3
PHS 3507	3
THE 3100-2600	3
BIO 3270, 3271	4
HIS 1000C	3

TOTAL 16

FOURTH YEAR

FALL SEMESTER

ALH 4341	15
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TOTAL 15

Spring Semester

ALH 4341	15
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TOTAL 15

CYTOTECHNOLOGY PROGRAM

(minimum of 130 semester hours)

The faculty expressly reserves the right to make alterations in the curriculum consistent with the needs of the profession.

FIRST YEAR

FALL SEMESTER CREDITS

ENG 1000C	3
MTH 1250	3
CHE 1110, 1111, 1112	4

BIO 1210, 1211	4
DNY 1000C	3
TOTAL	17

SPRING SEMESTER	CREDITS
ENG 1100C	3
MTH 1260	3
CHE 1120, 1121, 1122	4
BIO 1220, 1221	4
PHI 1000C	3
TOTAL	17

SECOND YEAR

FALL SEMESTER	
CHE 1130, 1131, 1132	4
BIO 2280, 2281	4
THE 1000C	3
MFL 1000C or ART 1000C	3
SPE 1000C	3
TOTAL	17

SPRING SEMESTER	
PHS 2101	3
PHI 2200/2240/1020	3
MFL 1100C or ART 1100C	3
Social Science Elective	3
THE 2200-2600	3
TOTAL	15

THIRD YEAR

FALL SEMESTER	
PHS 3504	3
PHI 3000C	3
BIO 2260, 2261	4
THE 3100-3600	3
HIS 1000C	3
PHS 3302	1
TOTAL	17

SPRING SEMESTER	
PHS 3510	3
BIO 3270, 3271	4
BIO 3320, 3321	4
PHS 3507	3
General Elective	3
TOTAL	17

FOURTH YEAR

(52 weeks of didactic education and clinical experience)

FALL SEMESTER	
ALH 4421	15
SPRING SEMESTER	
ALH 4421	15

MINORS AVAILABLE FOR ALLIED HEALTH STUDENTS

(Except Pharmacy Students)

Business
Chemistry
Computer Science
English
Government and Politics
History
Philosophy

Psychology
Sociology
Theology

MINORS APPROVED FOR PHARMACY STUDENTS

Biology
Business
Chemistry
Philosophy
Psychology
Public Administration and Public Service
Sociology
Theology and Religious Studies

ALLIED HEALTH (ALH)

OBJECTIVES

To provide a strong foundation in the basic allied health and industrial sciences and the necessary tools to work in selected allied health professions and various related industrial sciences.

1201 INTRODUCTION TO HEALTH CARE

Problems in the development of comprehensive health services in the United States; characteristics of a profession; development of modern medical practice from primitive medicine; medical terminology; drug delivery system in the United States; consideration of the many health professions that form the health team. *Lecture, 2 hours. Credit: 2 semester hours.*

2101 INTRODUCTION TO MEDICAL TECHNOLOGY

Historical development of the clinical laboratory sciences profession. Introduction to the types of tests performed in a clinical laboratory. *Lecture, 2 hours. Credit: 2 semester hours.*

4141 CLINICAL MICROBIOLOGY (MED. TECH.)

This course covers the pathogenic bacteria, fungi, viruses, etc. In addition to theory, students are trained in the preparation of media; complete identification of organisms from clinical material; testing of antibiotic sensitivity; examination of direct smears; fungus isolation techniques; autogenous vaccine preparation and phage typings. *Lectures and laboratory. Credit: 6 semester hours.*

4142 CLINICAL SEROLOGY (MED. TECH.)

Covers the principles of serology and immunology. Tests performed cover the diagnosis of venereal diseases, infectious mononucleosis, febrile states, Rickettsial diseases, etc. Principles of complement fixation, flocculation, precipitation, fluorescent antibody and T.P.I. are included. *Laboratory and lecture. Credit: 2 semester hours.*

4143 CLINICAL PARASITOLOGY (MED. TECH.)

Lectures and laboratory experiments enable students to identify the parasites and vectors which are most important to man. *Credit: 2 semester hours.*

4144 CLINICAL IMMUNOHEMATOLOGY (MED. TECH.)

The theory and practice of blood group systems; abnormal antibody detection; compatibility testing; blood procurement; the management of hospital blood banks. *Credit: 4 semester hours.*

4145 CLINICAL HEMATOLOGY (MED. TECH.)

The theoretical and practical aspects of hematology, proceeding from a study of normal blood constituents and hematopoiesis to disorders of the blood and bone marrow. *Lectures and laboratory. Credit: 6 semester hours.*

4146 CLINICAL CHEMISTRY (MED. TECH.)

The chemical analysis of body fluids such as blood, urine, spinal fluid. Gas determinations and the more important toxicological tests are performed. Manual methods, instrumentations and quality control are included. *Credits: 8 semester hours.*

4147 URINALYSIS (MED. TECH.)

The methods of collecting, preserving and analyzing urine. Includes examination of the physical and chemical properties; assays for normal and abnormal constituents; kidney function tests; and pregnancy test. *Credit: 2 semester hours.*

4240 INTRODUCTION TO THE DIDACTIC PHYSICIAN ASSISTANT EXPERIENCE

This month-long course marks the transition from academic to professional studies. Starting with medical terminology and introduction to professional practice, this course starts the application of basic science skills to the professional body of knowledge. *Credit: 3 semester hours. Summer Only.*

**4241;4242 CLINICAL EXPERIENCE-DIDACTIC (PHYSICIAN ASSISTANT)

The didactic material is presented in 13 phases during the first 10 months of instruction. They are: Introduction, Integumentary System, Medical-Surgical conditions of the Head and Neck, Musculo-Skeletal System, Cardiovascular System, Respiratory System, Nervous System, Digestive System, Genito-Urinary System, Reproductive System, Endocrine System, Pediatrics and Geriatrics. *Credit: 12;15 semester hours. 2 semesters.*

**4341 CLINICAL EXPERIENCE (PATHOLOGIST ASSISTANT)

The clinical experience is provided over a 12 month period on a rotational basis. The student is assigned to a Pathologist preceptor so that practical instruction may be acquired. Assignments are in the areas of Gross Anatomy and Autopsy Technique, Microscopic Anatomy and Histopathology Technique, Bacteriological and Sterile Technique of Biological Material. *Credit: 15 semester hours. 2 semesters.*

**4441 PROFESSIONAL DIDACTIC PROGRAM AND CLINICAL ROTATION FOR CYTOTECHNOLOGISTS

This 12 month course includes general studies of the complete genital tract, respiratory system, body cavity fluids, alimentary tract, urinary tract and breast. Special cytology includes, but is not limited to, sex chromatin cytogenetics, aspiration (cysts, tumors, amniocentesis), wound washings, imprints-touch preparations and experimental cytology. Clinical rotations to include: cytopreparatory techniques—cell spreads, concentration methods filtration, centrifugation, mucolysis, cell blocks, basic stains, fixation and theory, routine diagnostic staining, special stains, mounting and quality control. Record keeping focuses on reporting, storage, retrieval, statistical analysis, quality control. Medical literature covers journal club, literature retrieval, special projects and library searches. One grade is given for all 30 credits. *Credit: 30 semester hours.*

5240 TRANSITION TO THE CLINICAL PHYSICIAN ASSISTANT EXPERIENCE

This three month course provides transition from the previous didactic work to the commencement of the year long medical studies in the clinical setting. On call rotations begin during this semester. *Credit: 6 semester hours. Summer Only.*

****5241;5242 CLINICAL EXPERIENCE-CLINICAL (PHYSICIAN ASSISTANT)**

The clinical experience is provided over a fourteen month period on a rotational basis. The student is assigned to various physician preceptors so that practical instruction may be acquired, and the opportunity to utilize the didactic information provided is realized. Assignments are in the areas of Medicine, Surgery, Pediatrics, Obstetrics/Gynecology and Primary Medical Care. Opportunity is provided for the student to participate in elective rotations. *Credit: 12 semester hours. 2 semesters.*

***One grade is given for all semesters' credit.*

PHARMACY (PHR)

1101 ST. JOHN'S UNIVERSITY EXPERIENCE/SHADOWING

Prerequisite(s): CPP 1101. This course is designed to allow the student an opportunity to develop an appreciation for contemporary pharmacy practice by observing various pharmacy practitioners in their professional settings. During this shadowing experience, the student gains exposure to relevant ethical and practical issues of pharmacy practice and is expected to share observations and experiences with fellow classmates in a formalized setting at the University on a periodic basis throughout the semester. In addition, the student is expected to develop an appreciation for the mission of St. John's University as well as the service aspects of the pharmacy profession by participating in a relevant community service project. Given on a Pass/Fail basis. *Lecture, 1 hour. Credit: 1 semester hour.*

4101 DRUGS AND DISEASES OF THE CARDIOVASCULAR SYSTEM

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of cardiovascular disease. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapies. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 4 hours. Credit: 4 semester hours.*

4102 DRUGS AND DISEASES OF THE ENDOCRINE AND REPRODUCTIVE SYSTEMS

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of endocrine and reproductive disorders. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapies. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 2 hours. Credit: 2 semester hours.*

4103 DRUGS AND DISEASES OF THE GASTROINTESTINAL TRACT

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of diseases of the gastrointestinal tract. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapies. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 2 hours. Credit: 2 semester hours.*

4104 DRUGS AND DISEASES OF THE SKIN AND CONNECTIVE TISSUE

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of skin and connective tissue diseases. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapies. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 2 hours. Credit: 2 semester hours.*

4105 DRUGS AND INFECTIOUS DISEASES

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of infectious disease. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, medicinal chemistry, pharmacology, therapeutics and self-care therapeutics. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 4 hours. Credit: 4 semester hours.*

4106 DRUGS AND DISEASES OF THE KIDNEY AND ELECTROLYTE IMBALANCES

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of kidney and electrolyte imbalances. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapies. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 3 credits. Credit: 3 semester hours.*

4107 DRUGS AND DISEASES OF THE RESPIRATORY SYSTEMS

Prerequisite(s): All courses in the first three years. This course is designed to instruct the student in the area of respiratory disease. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapies. This course incorporates interdisciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 3 hours. Credit: 3 semester hours.*

4108 CLINICAL PHARMACOKINETICS

Prerequisite(s): PAS 4304. This course applies pharmacokinetic and biopharmaceutics principles to drugs that are therapeutically monitored in clinical trials. Therapeutic drug monitoring as it relates to the design of optimum drug dosage regimens is examined in this course. *Lecture, 2 hours. Credit: 2 semester hours.*

4201 PHARMACY PRACTICE LABORATORY III

Prerequisite(s): All required third year coursework. *Co-requisite(s):* PHR 4101, PHR 4102, PHR 4103, PHR 4104, PAS 4303. This laboratory integrates the didactic coursework of the Drugs and Contracted Disease courses and Extemporaneous Compounding courses and provides the student the opportunity to apply data in a simulated pharmacy setting. The student assesses patient findings, evaluates new prescription orders and considers how these new orders impact on current therapy, prepares the new order and addresses any and all potential problems that are identified and dispenses the preparation to the patient. Additionally, students learn to triage patients and assess the role of over-the-counter medications in light of other patient factors. *Laboratory, 3 hours. Credit: 1 semester hour. Fee \$120.*

4202 PHARMACY PRACTICE LABORATORY IV

Prerequisite(s): All required third year coursework and PAS 4303. *Co-requisite(s):* PHR 4105, PHR 4106, PHR 4107. This laboratory integrates the didactic coursework of the Drugs and Disease courses and Extemporaneous Compounding courses and provides the student the opportunity to apply data in a simulated pharmacy setting. The student assesses patient findings, evaluates new prescription orders and considers how these new orders impact on current therapy, prepares the new order and addresses any and all potential problems that are identified and dispenses the preparation to the patient. Additionally, students learn to triage patients and assess the role of over-the-counter medications in light of other patient factors. *Laboratory, 3 hours. Credit: 1 semester hour. Fee \$120.*

5000 CARDIOPULMONARY RESUSCITATION TECHNIQUES AND FIRST AID

This Standard First Aid course provides the student with the basic principles of cardiopulmonary resuscitation (CPR) and leads to CPR and first aid certifications. Certification must be obtained prior to the advanced experiential rotations. *Lecture, one 51/2 hour course. Credit: 0 semester hour.*

5108 DRUGS AND NEOPLASTIC AND ASSOCIATED DISEASES

Prerequisite(s): All courses in the first four years. This course is designed to instruct the student in the area of neoplastic disorders. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapeutics. This course incorporates inter-disciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 4 hours. Credit: 4 semester hours.*

5109 DRUGS AND DISEASES OF THE HEMATOPOIETIC SYSTEM

Prerequisite(s): All courses in the first four years. This course is designed to instruct the student in the area of hematopoietic disorders. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapeutics. This course incorporates inter-disciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 2 hours. Credit: 2 semester hours.*

5110 DRUGS AND DISEASES OF PSYCHIATRIC DISORDERS

Prerequisite(s): All courses in the first four years. This course is designed to instruct the student in the area of psychiatric disorders. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics, and self-care therapeutics. This course incorporates inter-disciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 2 hours. Credit: 2 semester hours.*

5111 DRUGS AND DISEASES OF NEUROLOGICAL DISORDERS

Prerequisite(s): All courses in the first four years. This course is designed to instruct the student in the area of neurological disorders. Teaching emphasis is a sequential method of instruction relevant to specific disease states to incorporate the areas of pathophysiology, pharmacology, medicinal chemistry, therapeutics and self-care therapeutics. This course incorporates inter-disciplinary instruction utilizing faculty from varied areas of expertise and experience. *Lecture, 2 hours. Credit: 2 semester hours.*

5201 BIOMEDICAL LABORATORY IV (FOR PHARMACY MAJORS ONLY)

Prerequisite(s): PHS 2301, PHS 3302, PHS 3303, BIO 1210, BIO 1220, PHS 3504, PHS 3507, PHS 3508, PHS 3509. *Co-requisite(s):* PHR 4101, PHR 4102, PHR 4103 and PHR 4104. Demonstration and experimentation of basic principles of medicinal chemistry, pharmacology, toxicology and biotechnology. *Laboratory, 3 hours. Credit: 1 semester hour. Fee \$120.*

6101 NUTRACEUTICS

Prerequisite(s): All required courses through the fifth year. This course is designed to acquaint the student with the basic issues pertaining to the development, modes of administration, efficacy and marketing of nutraceuticals, that is foods or parts of foods and chemical components of foods which provide medical benefits including the prevention and/or treatment disease. In addition, the role of vitamins, minerals and other dietary supplements is discussed in terms of their role in contributing to or maintaining health. The role and status of herbal products, homeopathy and naturopathy as alternative therapies to mainstream medicine are also covered. *Lecture, 2 hours. Credit: 2 semester hours.*

CLINICAL PHARMACY PRACTICE (CPP)

Judith L. Beizer, Pharm.D., Chair

OBJECTIVES

The department seeks to provide students with the opportunity to acquire the knowledge, develop the attitudes and master the skills required for contemporary clinical pharmacy practice.

Lectures, utilization of the multi-media programs in the Resource Center, and individual and group conferences with faculty and preceptors give the student the opportunity to acquire the knowledge base required to be a drug advisor on the health care team.

By participation in health care settings throughout the curriculum and through interac-

tions with patients, physicians, nurses, paraprofessionals and pharmacists, assistance is given to the student to develop the professional attitudes and acquire the communication techniques and skills which are prerequisites for health practitioners who wish to apply academic knowledge to practical situations.

Utilization of the Pharmacy Practice and Patient Assessment Laboratories and primary health care settings, including community pharmacies, allows the student to become familiar with the legal, administrative and clinical aspects of successful pharmacy practice. In addition, other clinical training sites are utilized as resources for student instruction in therapeutic drug monitoring, provision of drug information and patient interviewing and education. These include: Major metropolitan area medical centers, community hospitals and clinics and institutions emphasizing the care of specific patient populations (e.g., pediatric, psychiatric, geriatric care).

1101 INTRODUCTION TO PHARMACY PRACTICE

This course is designed to provide the student with an overview of the pharmacy profession and contemporary practice issue. Focus is drawn to analysis of the attributes of the pharmacy profession, expectations and realities of a pharmacy student and pharmacist, and the concept of pharmaceutical care. Also, emerging and unique roles of the pharmacist on the health care team is discussed. Given on a Pass/Fail basis. *Lecture, 1 hour. Credit: 1 semester hour.*

2101 MEDICAL TERMINOLOGY

Self-study programmed learning course utilizing a text. Only open to students in the College of Pharmacy and Allied Health Professions and only given on a Pass/Fail basis. *Credit: 1 semester hour.*

CPP 3153 INTRODUCTION TO ALTERNATIVE MEDICINE

Prerequisites: CPP 1101, PAS 2301. This course is intended to provide an introduction to the origin, basic principles, indications and philosophy of selected alternative medicine modalities. In addition, it provides an overview of regulatory/legal issues, how to obtain reliable information on alternative practices and review the educational requirements of practitioners involved in these practices. *Lecture, 2 hours. Credit: 2 semester hours.*

3201 INTRODUCTION TO PHARMACEUTICAL CARE

Prerequisite(s): PHS 2101, PAS 3301, *Corequisite(s):* PHS 3510. This course is designed to introduce the student to the concept of pharmaceutical care. Pharmaceutical care embraces the concept of pharmacist-managed/patient-oriented pharmacy services directed at providing effective, safe and cost effective drug therapy via outcomes monitoring and assessment. Selected disease states are discussed with emphasis on pathophysiology and rational therapy and the development of an appropriate pharmacy care plan. *Lecture, 2 hours. Credit: 2 semester hours.*

3951 RESEARCH IN CLINICAL PHARMACY I*

Opportunity for students to participate in ongoing clinical research studies under the direction of clinical faculty. Permission for student participation must be obtained from a clinical faculty member prior to course registration. A minimum of three hours per week is expected of the student relevant to clinical research participation. Students must be in compliance with college policies for placement in a clinical site (health insurance, physical examination, malpractice insurance). *Credit: 3 semester hours.*

3952 RESEARCH IN CLINICAL PHARMACY II*

Prerequisite: CPP 3951. Opportunity for students to continue clinical research activities or undertake additional projects. Same requirements as stated in CPP 3951 description. *Credit: 3 semester hours.*

4301 DRUG INFORMATION AND LABORATORY

Prerequisite(s): CUS 1108, CPP 3201, PHS 3508, PHS 3509. The philosophy and fundamentals of drug information practice, and the application of drug information skills in the delivery of pharmaceutical care are discussed. The student acquires the basic skills necessary for the provision of drug information through lectures, homework and laboratory project assignments in the areas of drug information retrieval, drug literature evaluation and quality assurance. *Lecture, 1 hour; laboratory, 1 hour. Credit: 2 semester hours.*

4401 PHARMACY PRACTICE EXTERNSHIP (PHARM. D. ONLY)

Prerequisites: CPP 4301, CPP 3201, PHS 3508, PHS 3509, PAS 4303. This course is an experiential training course that exposes the student to all aspects of traditional pharmacy practice, both in the ambulatory as well as the institutional setting. Under the direct guidance of an approved preceptor, the student evaluates, compounds or prepares and dispenses prescriptions to select patients or their designees. He/she also updates patient medication profiles, participates in drug use reviews/evaluations, evaluates the patient's overall medication profile and, where appropriate, counsels patients or their designees about adverse reactions, drug interactions and medication compliance. Students are also exposed to the administrative, financial and clinical activities that the pharmacist routinely undertakes in the appropriate provision of pharmaceutical care. *Externship, 30 hours. Credit: 1 semester hour.*

4402 LITERATURE EVALUATION AND RESEARCH DESIGN (PHARM. D. ONLY)

Prerequisite: CPP 4301. Literature evaluation and research design provide the student with a basic understanding of appropriate research design and methodology, biostatistics and reporting of results. The objective of this course is to provide the student with the skills and knowledge base to critically evaluate the primary literature and understand the practical implications of such literature. *Lecture, 2 hours. Credit: 2 semester hours.*

5401 INSTITUTIONAL PHARMACY PRACTICE EXTERNSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This course is a module rotation in which the student participates in the provision of pharmaceutical services in an institutional setting. Under the supervision of qualified preceptors, the student is integrated into the provision of pharmaceutical care and participates in the various functions of an institutional pharmacy department. Such activities include obtaining and recording relevant patient specific information, interpreting and recording prescription orders, preparing prescription products for administration to patients, discharge patient education and medication counseling, and adverse drug reaction assessment and reporting. In addition, the student is exposed to various administrative issues with regards to inpatient pharmacy services including third-party payment billing, formulary management, quality assurance assessments, and inventory control. *Externship 160 hours. Credit: 3 semester hours.*

5402 AMBULATORY PHARMACY PRACTICE EXTERNSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This is an experiential training course that exposes the student to all aspects of pharmacy practice in the ambulatory setting. Under the direct guidance of an approved preceptor, the student functions as a primary health practitioner who will evaluate medication orders, prepares and dispenses medications, and counsels patients regarding their drug therapy. In addition, students perform other functions required of pharmacists in the ambulatory setting including maintaining patient profiles, third-party insurance billing, and inventory control. *Externship, 160 hours. Credit: 3 semester hours.*

5403 INPATIENT CLERKSHIP I

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This course is an experiential rotation in an approved institution that is intended to expose the student to various aspects of clinical pharmacy practice in the inpatient setting. Under the direct guidance of an approved preceptor, the student functions as an integral part of the health-care team by performing numerous activities in accordance with the concept of total patient care. The clinical site activities include work rounds, obtaining patient drug histories, discharge patient education and medication counseling, and review of patient case studies with emphasis on rational drug therapy. Conferences are scheduled at the institution to discuss patient care activities and effective patient management. *Clerkship, 160 hours. Credit: 3 semester hours.*

5404 ELECTIVE I CLERKSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This rotation introduces the student to a specialized area of pharmacy practice. This area may be selected according to the student's interest or an area of medicine in need of further emphasis. This rotation may involve direct interaction with patients, managerial aspects of pharmacy practice or research pertaining to pharmacy practice. *Clerkship, 160 hours. Credit: 3 semester hours.*

5405 INPATIENT CLERKSHIP II

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This course is an experiential rotation in an approved institution that is intended to expose the student to various aspects of clinical pharmacy practice in the inpatient setting. This rotation further stresses the development of clinical skills that were introduced in the Inpatient Clerkship I rotation. Under the direct guidance of an approved preceptor, the student functions as an integral part of the health-care team by performing numerous activities in accordance with the concept of pharmaceutical care. The clinical site activities include work rounds, obtaining patient drug histories, discharge patient education and medication counseling and review of patient case studies with emphasis on rational drug therapy. Conferences are scheduled at the institution to discuss patient care activities and effective patient management. *Clerkship, 160 hours. Credit: 3 semester hours.*

5407 AMBULATORY CARE CLERKSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This course is an experiential rotation that is intended to expose the student to various aspects of clinical pharmacy practice in the inpatient setting. Under the direct guidance of an approved preceptor, the student functions as an integral member of the health-care team by providing pharmaceutical services to ambulatory patients in accordance with the concept of total patient care. The clinical activities emphasize the development of the pharmacist-patient relationship and include various aspects of preventative medicine, patient education and outcomes assessment. *Clerkship, 160 hours. Credit: 3 semester hours.*

5408 ELECTIVE II CLERKSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This rotation introduces the student to a specialized area of pharmacy practice. This area may be selected according to the student's interest or an area of medicine in need of further emphasis. This rotation may involve managerial aspects of pharmacy practice or research pertaining to pharmacy practice. *Clerkship, 160 hours. Credit: 3 semester hours.*

5409 ELECTIVE III CLERKSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This rotation introduces the student to a specialized area of pharmacy practice. This area may be selected according to the student's interest or an area of medicine in need of further emphasis. This rotation may involve managerial aspects of pharmacy practice or research pertaining to pharmacy practice. *Clerkship, 160 hours. Credit: 3 semester hours.*

5410 ELECTIVE IV CLERKSHIP

Prerequisites: All required courses through the fall of fifth year and successful completion of the comprehensive examination. This rotation introduces the student to a specialized area of pharmacy practice. This area may be selected according to the student's interest or an area of medicine in need of further emphasis. *Clerkship, 160 hours. Credit: 3 semester hours.*

6101 CASE STUDIES IN DRUGS AND DISEASES ISSUES IN PHARMACEUTICAL CARE

Prerequisites: All required courses through the fifth year. This course is a patient case-based interactive learning experience designed to strengthen the student's ability to provide pharmaceutical care. The cases discussed cover particular therapeutic dilemmas or challenges and reflect current treatment guidelines. Emphasis is placed on patient assessment and development of a pharmaceutical care plan. *Lecture, 3 hours. Credit: 3 semester hours.*

6102 PREVENTION AND MANAGEMENT OF DRUG INDUCED DISEASES

Prerequisites: All required courses through the fifth year. A general understanding of adverse drug events including monitoring, evaluating, preventing and managing these events provides a basis for organ system specific drug induced disease issues. Drug activity effecting untoward biochemical enzymatic changes related to cellular, organ and system functions are explored. Topics to be emphasized include blood dyscrasias, neurologic dysfunction, as well as undesirable drug effects on the gastrointestinal, hepatic, renal, dermal and other systems. *Lecture, 3 hours. Credit: 3 semester hours.*

6103 PHARMACODYNAMICS AND ADVANCED PHARMACOKINETICS

Prerequisites: PAS 4304, PHR 4201. This course is designed to provide advanced study of prevailing topics in the areas of applied clinical pharmacokinetics, pharmacodynamics, and include some aspects of special drug delivery systems. The principles of pharmacodynamics are explored utilizing contemporary examples of issues that are clinically relevant. Application of advanced pharmacokinetic principles are covered including examples of drugs that exhibit non-linear pharmacokinetics. Principles of drug removal by extra-corporeal means including physio-chemical properties are evaluated. External factors that may impact the removal of drug such as types of hemodialysis filters, blood flow rate on the machines and other contemporary issues are explored. Students would be expected to be able to adjust or correct for alterations in these variances in pharmacokinetic drug predictions. Contemporary computer clinical pharmacokinetic applications will be evaluated. *Lecture, 3 hours. Credit: 3 semester hours.*

PHARMACEUTICAL SCIENCES (PHS)

Louis D. Trombetta,
Ph.D., Chair

OBJECTIVES

The Department of Pharmaceutical Sciences is committed to providing a solid background in the biomedical sciences to allow students in pharmacy and allied health programs to acquire critical learning skills and to develop successful careers rendering health service to the public in industrial, academic and clinical settings. The department provides students with the fundamental knowledge base that enables them to interpret and remain current with the scientific literature in clinical and basic research. Students are prepared to explain the action of drugs in current use and to understand the manner in which these drugs are employed in clinical and basic science settings. Students are expected to acquire the necessary critical skills and background in chemistry, physiology, toxicology and pharmacology that are essential to understanding the nature, composition, standardization and evaluation of natural and synthetic substances used in the diagnosis, prevention and treatment of disease.

1101 INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY I (FOR NURSING STUDENTS)

Detailed study of the mechanisms whereby the human body maintains homeostasis in the major functional systems of the body. Emphasis is placed on the clinical physiology and anatomical relationships of the renal, nervous, respiratory and cardiovascular systems, to provide a foundation for the study of pharmacology. *Lecture, 3 hours. Credit: 3 semester hours.*

1102 INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY LABORATORY I (FOR NURSING STUDENTS)

Corequisite: PHS 1101. Demonstration and study of major functional systems of the body. *Laboratory, 3 hours. Laboratory fee \$120. Credit: 1 semester hour.*

1103 INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY II (FOR NURSING STUDENTS)

Corequisite: PHS 1104. A study of the structure and function of the major body systems: nervous, endocrine, urinary, body fluids and electrolytes, reproductive system. *Lecture, 3 hours. Credit: 3 semester hours.*

1104 INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY LABORATORY II (FOR NURSING STUDENTS)

Corequisite: PHS 1103. Demonstration and study of major functional systems of the body. *Laboratory, 3 hours. Laboratory fee \$120. Credit: 1 semester hour.*

2101 PUBLIC HEALTH FOR THE PHARM.D.

Prerequisites: BIO 1210. *Co-requisite(s):* BIO 1220. All aspects of public health including organizations, administration, environmental social health problems are discussed. The study of epidemiology and disease control is emphasized. *Lecture, 3 hours. Credit: 3 semester hours.*

2201 BIOPHARMACEUTICAL CHEMISTRY/BIOTECHNOLOGY

Prerequisites: CHE 1110,1111,1112, CHE 1120, 1121, 1122, CHE 1130, 1131, 1133, BIO 1210. *Co-requisite(s):* BIO 1220, PHS 2301. The course is an intermediate level undergraduate biochemistry and molecular biology lecture course. The chemistry of macromolecules, i.e., proteins, lipids assemblies, nucleic acids, polysaccharides and enzymology, an introduction to metabolic pathways and energy utilization in cells is the bulk of the material. In addition, the fundamental biochemical notions of nucleic acid metabolism, including DNA replication and repair mechanisms, RNA, and protein synthesis is covered. Vitamins and trace metals are discussed from the standpoint of their role in enzymatic reactions and metabolic sequences, and where possible related to health consequences. *Lecture, 4 hours. Credit: 4 semester hours.*

2301 BIOMEDICAL LABORATORY I

Prerequisites: CHE 1110, 1111, 1112, CHE 1120, 1121, 1122, CHE 1130, 1131, 1132 BIO 1210. *Co-requisite(s):* PHS 2201, BIO 1221. Demonstration and experimentation of basic principles of pharmaceutical biochemistry and biotechnology. *Laboratory, 3 hours, Credit: 1 semester hour. \$120 fee.*

2403 CURRENT ISSUES IN TOXICOLOGY

Toxicology is the science concerned with understanding the nature of toxic chemicals and how they interact with living organisms. Public issues and controversies where toxic chemicals are involved are studied with respect to the social, political and scientific values that impinge on their resolution. *Lecture, 3 hours. Credit: 3 semester hours.*

3103 HUMAN ANATOMY AND PHYSIOLOGY (FOR ALLIED HEALTH STUDENTS)

Prerequisite: CHE 2240, 2241. Detailed study of the mechanisms whereby the human body maintains homeostasis in the major functional systems of the body. Emphasis is placed on the clinical physiology and anatomical relationships of the renal, nervous, respiratory and cardiovascular systems, to provide a foundation for the study of pharmacology. *Lecture, 3 hours. Credit: 3 semester hours.*

3104 HUMAN ANATOMY AND PHYSIOLOGY LABORATORY I (FOR ALLIED HEALTH STUDENTS)

Corequisite: PHS 3105. Demonstration and study of major functional systems of the body. *Laboratory, 3 hours. Laboratory fee \$120. Credit: 1 semester hour.*

3105 HUMAN ANATOMY AND PHYSIOLOGY II (FOR ALLIED HEALTH STUDENTS)

Corequisite: PHS 3104. A study of the structure and function of the major body systems: nervous, endocrine, urinary, body fluids and electrolytes, reproductive system. *Lecture, 3 hours. Credit: 3 semester hours.*

3106 INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY LABORATORY II (FOR ALLIED HEALTH STUDENTS)

Corequisite: PHS 3105. Demonstration and study of major functional systems of the body. *Laboratory, 3 hours. Laboratory fee \$120. Credit: 1 semester hour.*

3302 BIOMEDICAL LABORATORY II (FOR PHARMACY STUDENTS)

Prerequisite(s): PHS 2301. *Co-requisite(s):* PHS 3504, PHS 3506. Demonstration and experimentation of basic principles of human anatomy and physiology, microbiology, immunology and biotechnology. *Laboratory, 3 hours. Credit: 1 semester hour. \$120 fee.*

3303 BIOMEDICAL LABORATORY III (FOR PHARMACY STUDENTS)

Prerequisites: PHS 2301, PHS 3302. *Corequisites:* PHS 3504, PHS 3506. Demonstration and experimentation of basic principles of medicinal chemistry, pharmacology, toxicology and biotechnology. *Laboratory, 3 hours. \$120 fee. Credit: 1 semester hour.*

3405; 3406 PRINCIPLES OF TOXICOLOGY I; II (FORMERLY 2401, 2402)

An introduction to toxicology with emphasis on material involved as well as systems affected. A discussion of the classifications of poisons and the preventive aspects. *Lecture, 4 hours. Credit: 4 semester hours.*

3504 APPLIED HUMAN ANATOMY AND PHYSIOLOGY I

Prerequisites: BIO 1210, BIO 1220, PHS 2201. *Co-requisite(s):* PAS 3302. A study of the structure and function of the major body systems, molecular aspects of cell biology, cell physiology, cell structure and organization, tissues, integumentary, musculoskeletal, cardiovascular, lymphatic, respiratory and digestive systems. *Lecture, 3 hours. Credit: 3 semester hours.*

3505 CLINICAL IMMUNOLOGY

Prerequisites: BIO 1210, BIO 1220, PHS 2201, PHS 2101. A study of the lymphatic system, immune response and immunity in humans. Principles of antibody-antigen relationship are discussed. Special emphasis is placed on molecular biology of the immune response, genes controlling antibody synthesis, its development, function and immunopathology are discussed. Methods of detection of immunogenic molecules and immunotherapy are also discussed. *Lecture, 2 hours. Credit: 2 semester hours.*

3506 INTRODUCTION TO INFECTIOUS DISEASES

Prerequisites: BIO 1210, BIO 1220, PHS 2201, PHS 2101. A study of the general microbial concepts, principles of infectious disease and host parasite relationships. Special emphasis is placed on pathogenic microorganisms of man, inflammatory responses to infectious agents and clinical aspects of infections. *Lecture, 2 hours. Credit: 2 semester hours.*

3508 INTRODUCTION TO MEDICINAL CHEMISTRY

Prerequisites: PHS 2201, PHS 2301, PHS 3302. This course introduces the student to the scientific principles which are fundamental to medicinal chemistry and foundational to the integration of this basic pharmaceutical science into therapeutics. Specifically the course introduces the student to the various drug categories with particular emphasis on chemical nomenclature, physico-chemical properties and chemical aspects of the dynamics of drug action. *Lecture, 2 hours. Credit: 2 semester hours.*

3509 INTRODUCTION TO PHARMACOLOGY

Prerequisites: PHS 2201, PHS 3504, PHS 2301, PHS 3302. *Co-requisite(s):* PHS 3507, PHS 3303. This course introduces the student to the scientific principles which are fundamental to pharmacology and foundational to the integration of this basic pharmaceutical science into therapeutics. Specifically the course introduces the student to the various drug categories and their mechanism of action including receptor interactions and the dynamics of drug action. *Lecture 2 hours. Credit: 2 semester hours.*

3510 GENERAL PATHOLOGY AND CLINICAL LABORATORY DATA

Prerequisites: PHS 3504, PHS 2101, PHS 3505, PHS 3506, PHS 3302. *Co-requisite(s):* PHS 3507, PHS 3303. A detailed study of the basic principles involving the mechanisms of disease are discussed. Special emphasis is placed on degeneration, inflammation and repair, disturbances in hemodynamics, developmental defects and neoplasia. Clinical correlates are covered with respect to laboratory data. *Lecture, 3 hours. Credit: 3 semester hours.*

3951;3952 RESEARCH IN PHARMACEUTICAL SCIENCES I; II*

An elective course designed to familiarize the student with opportunities for research in the various disciplines found in the Department. It involves conducting an actual research project under the guidance of a faculty member in the student's chosen area. *Laboratory fee, \$120. Credit: 3 semester hours.*

4401 ANALYTICAL TOXICOLOGY

Prerequisites: Che 3250, 3251, PHS 3405, PHS 3406. Various methods of specimen and sample preparation and extractions are considered. Chemical instrumental techniques are applied to solve problems confronting the analytical toxicologist. Various chromatographic, spectroscopic and immunological assays are considered as methods of screening, identifying and quantitating toxic substances. Methods of preparation and analysis are critically analyzed as to strengths and weaknesses. Interpretation of the toxicological findings is undertaken. *Lecture, 4 hours. Credit: 4 semester hours.*

4402 ADVANCED TOXICOLOGICAL METHODS

Prerequisites: PHS 3405, PHS 4301, MTH 1210, MTH 1220. This course is an advanced level course dealing with the various methods, procedures and advance concepts essential to the science, practice and "state of the art" of modern toxicology. Critical thinking skill development and data interpretation issues are incorporated from such perspectives as risk assessment and management of toxic chemicals, experimental design and statistical management of toxicologic studies and evaluations, regulatory management of environmental and industrial chemical exposures, clinical management of drug therapy and chemical/drug poisoning, and forensic detection and characterization of chemical and drug exposure and poisoning. This course is complementary to PHS 4403 (Toxicology Colloquium.) *Lecture, 4 hours. Credit: 4 semesters hours.*

4403 TOXICOLOGY COLLOQUIUM (FORMERLY PHS 3403)

This course offers an extensive exposure to the various theoretical areas of toxicology, including: analytical (forensic/clinical), pharmaceutical (pre-clinical) and environmental subdisciplines, accomplished through a series of guest lectures, field trips, didactic presentations and student presentation in seminar format. The student is also prepared for the process of identifying a research question of toxicological interest, research design and the handling of research data. *Lecture, 4 hours. Credit: 4 semester hours.*

PHS 4404 PHARMACOLOGIC TOXICOLOGY

Prerequisites: PHS 3509, 3405, 2201. *Corequisites:* PHS 4401, PHR 4304.

Agents affecting the autonomic, central nervous, cardiovascular, renal and endocrine systems, as well as antiinfective/antineoplastic agents are examined therapeutically and toxicologically. *Lecture, 4 hours. Credit: 4 semester hours.*

PHS 4405 PHARMACOLOGIC TOXICOLOGY LABORATORY

Prerequisite: PHS 3509. This laboratory will provide the student with opportunity to experience the effects of drugs and other toxic substances on living systems, in coordination with the course on Pharmacology-Toxicology. In addition to the analytical determination of basic properties of chemical substances, the student will perform gross screening protocols for biologic activity, evaluate the time course of pharmacologic/toxicologic action for selected substances, and perform dose-response characterizations for selected drug/drug interactions. Finally the student will utilize in-vitro assessment methodologies to characterize the toxic potential of various chemical substances. *Laboratory, 3 hours. Credit: 1 semester hour. Laboratory fee \$120.*

5301 TOXICOLOGY AND DRUGS OF ABUSE

Prerequisite(s): All required courses in the first four years. Students are instructed in the principles of toxicology with an emphasis placed on clinical toxicology and the management of the drug overdose victim and the adverse effects caused by drugs of abuse. *Lecture, 2 hours. Credit: 2 semester hours.*

PHARMACY AND ADMINISTRATIVE SCIENCES (PAS)

Somnath Pal, Ph.D., Chair

OBJECTIVES

The Department seeks to provide students with the opportunity to acquire the knowledge, develop the attitudes and master the skills required for contemporary pharmacy practice.

Lectures, utilization of the multi-media programs in the Resource Center and individual and group conferences with faculty give the student a knowledge of the principles and processes in the manufacture, stabilization, preservation, storage and dispensing of both official and non-official dosage forms.

Classroom and conference discussions give the student an opportunity to develop creative talents in compounding and formulating dosage forms.

2201 INTRODUCTION TO PHARMACOECONOMICS

Prerequisites: MTH 1250, MTH 1260, PAS 2301. This course is designed to provide the student with introductory concepts of pharmacoeconomics as it relates to patient care. Overview of economic principles, which may enhance the understanding of the theory underlying pharmacoeconomic analysis, is integrated in this course. A special emphasis is also placed on applying the economic evaluation and quality of life concept to improve the allocation of limited health care resources. *Lecture, 2 hours. Credit: 3 semester hours.*

2301 SOCIAL ASPECTS OF PHARMACY PRACTICE

Prerequisites: PHR 1101. This course is designed to introduce the student to the social aspects of pharmacy practice. Important areas to be discussed include the pharmacy as a profession, professionalization of the student, and the image of pharmacist held by patients. The role of the pharmacist in various practice settings as related to patient care and interaction with other health care professionals is explored. An overview of how the pharmacist plays a key element in drug therapy, drug product selection and therapeutic interchange is also discussed. Special emphasis is also placed on understanding the social aspects of drug use in today's society and the importance of providing pharmaceutical care to the patient. *Lecture, 1 hour. Credit: 1 semester hour.*

3101 PHARMACEUTICS I FOR THE PHARM. D.

Prerequisites: MTH 1250, MTH 1260, CHE 1110, 1111, 1112, CHE 1120, 1121, 1122, CHE 1130, 1131, 1132, BIO 1210, BIO 1220. *Co-requisite(s):* PAS 3102. Pharmaceutics is the applied science and technology of pharmacy and is based upon the physical, chemical and biological principles used in the preparation, preservation and utilization of drug products and/or pharmaceutical dosage forms. This semester concentrates on the specific physical, chemical and biological principles that govern homogeneous liquid dosage forms. The course integrates fundamentals and theory with the pharmaceutical dosage forms to which they best apply. This course also delineates methods and procedures essential to solving the mathematical problems typically associated with pharmacy practice. *Lecture, 4 hours. Credit: 4 semester hours.*

3102 PHARMACY PRACTICE LABORATORY I

Corequisite: PAS 3101. This laboratory course enables the student to correlate the principles and theory with experimental observation of homogeneous systems and affords the opportunity to become familiar with the apparatus and techniques of measurement. Upon completion of the laboratory course, the student should be able to apply the important principles of pharmaceutical science and technology and to use the techniques in the preparation of stable homogeneous liquid dosage forms. *Laboratory, 3 hours. Credit: 1 semester hour. \$120 fee.*

3103 PHARMACEUTICS II FOR THE PHARM. D

Prerequisites: PAS 3101, PAS 3102. *Corequisite:* PAS 3104. Pharmaceutics is the applied science and technology of pharmacy and is based upon the physical, chemical and biological principles used in the preparation, preservation and utilization of drug products and/or pharmaceutical dosage forms. This semester concentrates on the specific physical, chemical and biological principles that govern heterogeneous fluid, semi-solid and solid systems. The course integrates fundamentals and theory with the pharmaceutical dosage forms to which they best apply. Students are also introduced to the concepts of degradation of pharmaceutical products, pathways of degradation, factors affecting drug stability and approaches to maximize stability of a product. *Lecture, 4 hours. Credit: 4 semester hours.*

3104 PHARMACY PRACTICE LABORATORY II

Prerequisites: PAS 3101, PAS 3102. *Corequisite:* PAS 3103. This laboratory enables the student to correlate the principles and theory with experimental observation of heterogeneous systems. Upon completion of the laboratory course, the student should be able to apply the important physicochemical principles of pharmaceutical science and technology and to use the apparatus and techniques in the preparation of stable heterogeneous dosage forms. *Laboratory, 3 hours. Credit: 1 semester hour.*

3151 CALCULATIONS IN PHARMACY PRACTICE

Corequisites: PAS 3101, 3102. This course deals with pharmaceutical calculations involved in fabrication, dispensing, and delivery of pharmaceutical products. The scope includes determination of flow rates of liquids in continuous intravenous infusions, HLB, Osmolality, Millequivalents, and Allegation methods for mixtures consisting of more than two components. *Lecture, 2 hours. Credit: 2 semester hours.*

3352 INTRODUCTION TO PRODUCT DEVELOPMENT

Corequisites: PAS 3101, 3102. This course deals with considerations involved in product development and formulation of a dosage form. The processes and technology used in fabrication of a pharmaceutical product as discussed. The scope includes the influence of physico-chemical properties of the drug, theory, and practical aspects of mechanisms used in the preparation of these delivery systems. *Lecture, 2 hours. Credit: 2 semester hours.*

3301 PHARMACY AND THE U.S. HEALTH CARE ENVIRONMENT

Prerequisite: PAS 2201. This course is designed to introduce the students to the U.S. health care delivery system and explore the social, political, and economic factors which influence the flow of pharmaceutical products and services within the system. Special emphasis is placed on the role and function of pharmacy in the new paradigm of ever-changing health care. An overview of the current structure and financing is provided. Focus is given to the public and private sectors of health care, the major players, the pharmaceutical industry, third party plans, and managed care. In addition, the role of the pharmacist in health promotion and disease prevention is emphasized. *Lecture, 3 hours. Credit: 3 semester hours.*

3354 CONTEMPORARY ISSUES IN HOSPITAL PHARMACY

Prerequisite: PAS 2301. This course explores hospital pharmacy history and theory techniques, and administrative procedures. It acquaints the student with the pharmacy as a hospital department and the pharmacist's role within the institution and the health care system. *Lecture, 2 hours. Credit: 2 semester hours.*

3355 ENVIRONMENT OF PHARMACEUTICAL MARKETING

Prerequisite: PAS 2201, 2301. This course is designed to provide the student with a lucid and thorough overview of marketing in the pharmaceutical industry. It will cover important topics like the environment of pharmaceutical marketing, the institutions that comprise the industry, market and market research, secondary data from commercial suppliers, strategic development, and corporate and competitive analysis, at the macro and micro levels. *Lecture, 2 hours. Credit: 2 semester hours.*

3356 QUALITY ISSUES IN MANAGED CARE PHARMACY

Prerequisite: PAS 2301. *Corequisite:* PAS 2301. This course is designed to provide the student with an overview of the issues related to the medication use process within the managed care setting. The course emphasizes the provision of pharmacy benefit management services and its impact on the inputs, outputs, processes and participants of an ideal drug therapy system. The major goal of this course is to familiarize students with newer methodologies used to provide high quality pharmacy services while controlling pharmacy costs in a managed care setting. *Lecture, 2 hours. Credit: 2 semester hours.*

4303 EXTEMPORANEOUS COMPOUNDING

Prerequisites: PAS 3101, PAS 3103, PAS 3102, PAS 3104. *Corequisite(s):* PHR 4201. Extemporaneous compounding is the preparation of a medication for an individual patient following receipt of a legal order (prescription) from a prescriber. The course is structured to provide the students training and expertise to ascertain the quality, safety, and technique required to compound and dispense the prescription in community and institutional pharmacy practice. *Lecture, 3 hours. Credit: 3 semester hours.*

4304 BIOPHARMACEUTICS FOR THE PHARM. D.

Prerequisites: PAS 3101, PAS 3103. Biopharmaceutics is the study of the factors influencing the bioavailability of a drug in man and animals and the use of this information to optimize pharmacological or therapeutic activity of drug products in clinical application. This course includes study of a) biological and physicochemical factors of the body, drugs and drug dosage forms which may influence availability and disposition as well as pharmacological and toxicological responses of drugs, and b) mathematical models to assess drug absorption, distribution and elimination processes. *Lecture, 2 hours. Credit: 2 semester hours.*

4305 PHARMACY LAW

Prerequisites: PHI 1110, PHI 2300, PHI 2240. The purpose of this course is to provide the students with an understanding of the legal basis of pharmaceutical care. As professional persons empowered by state licensure to protect patients from risks, students learn about the responsibilities of pharmacists under the law and the limits of their responsibilities. The pharmacist's role in preventing liability by reducing drug-related morbidity is covered. Principles of criminal and civil liability, and business and contract law, where applicable to pharmacy practice, are included. Specific attention is given to rules of professional conduct as defined by the New York State Board of Pharmacy. *Lecture, 2 hours. Credit: 2 semester hours.*

5202 PHARMACY MANAGEMENT AND ADVANCED PHARMACOECONOMICS

Prerequisites: PAS 2201, PAS 3301, PAS 4305. This course provides the student with a broad information base essential to successful pharmacy management and efficient resource allocation in various professional practice settings. Students learn to apply management principles; planning, organizing, directing and controlling; in operating a pharmacy and to use economic appraisals to manage limited pharmacy resources. The course prepares pharmacy students to address change, increase competitiveness and optimize patient's services. *Lecture, 4 hours. Credit: 4 semester hours.*

ELECTIVE COURSES

Professional elective courses are made available by several departments of the College of Pharmacy and Allied Health Professions.

Non-professional electives may be selected from the courses offered by other departments of the University, with the approval of the appropriate Dean.

Those contemplating medical, dental, law or graduate study after graduation are advised to consult the appropriate school bulletin, since specific courses may be required for admission. Elective credits may be utilized to satisfy these requirements.

Courses selected as electives must be approved in advance by the Dean of the College of Pharmacy and Allied Health Professions.

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