

School of Pharmacy

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In 1941 the General Assembly took over the assets of the Connecticut College of Pharmacy and added this institution to the schools and colleges of the University of Connecticut. The pharmacy program, which had been "inaugurated under independent auspices" in New Haven in 1925, continued to operate there under State auspices until 1951, when the program was moved to Storrs. The School of Pharmacy has offered the Doctor of Pharmacy (Pharm.D.) as its sole professional degree since 1997. The professional program requires completion of the two years of pre-Pharmacy requirements, two years in the professional program leading to a Bachelor of Science with a major in Pharmacy Studies (B.S. Pharmacy Studies), followed by two additional years leading to a Doctor of Pharmacy (Pharm.D.). This professional B.S./Pharm.D. program is a **full-time**, four-year professional program (146 credits professional program plus 64 credits pre-pharmacy for a total of 210 credits), making the Pharm.D. graduate eligible to stand for licensure. For the last two years of the professional program (Pharm.D. years), there will be additional tuition and required fees for in-state students and proportional increases for New England Regional and out-of-state students.

The School of Pharmacy also offers a joint Pharm.D./Ph.D. Program. This program targets a small number of highly motivated students who seek to combine pharmacy education suitable for professional licensure with advanced research-based training in Pharmacology or Toxicology. Students completing this program will earn consecutive dual degrees, the Pharm.D. and the Ph.D. Students in the dual track are afforded early acceptance into the Ph.D. program and, if they successfully complete the Pharm.D. curriculum, a modified graduate curriculum will be tailored which will shorten the total time required to complete both degrees. Students must meet the admission requirements of both programs and apply to the Ph.D. program in the spring semester of the P2 year as they complete the B.S. in Pharmacy Studies.

Accreditation. The University of Connecticut's Doctor of Pharmacy program has been granted full accreditation by The Accreditation Council for Pharmacy Education (ACPE), <http://www.acpe-accredit.org/>. The School of Pharmacy also offers a number of courses leading to the degrees of Master of Science and Doctor of Philosophy. Students holding the degree of Bachelor of Science may prepare for the Doctor of Philosophy degree with a major in pharmaceuticals, medicinal and natural products chemistry, pharmacology or toxicology. The Master of Science degree in pharmaceutical sciences may be awarded in the above subject areas and pharmacy administration (see the *Graduate School Catalog*).

Regional Plan. In conformity with plans approved by the Boards of Trustees of the six New England land grant universities for regionalization of certain fields of specialized education, the University of Connecticut School of Pharmacy has been designated as a regional New England school for all other New England states except Rhode Island. Regional students enrolled in the professional program receive a tuition savings over out-of-state tuition rates.

Admission. Admission to the professional program in Pharmacy is competitive. Students should apply for admission to the School of Pharmacy after completion of their third semester of study for entry into the professional program in the following September. All required math, science and English courses must be completed by May for entry into the professional program in the following fall semester. Sociology and economics must be completed before admission into the fall semester. Students who have not fulfilled the University General Education requirements before they enter the professional program will have to complete those courses by May of the second professional year. Students seeking admission to the School of Pharmacy will complete their first two years in one of the schools or colleges of the University of Connecticut. Students may enter the College of Liberal Arts and Sciences as freshmen and identify themselves as pre-Pharmacy majors. Pre-Pharmacy students will be advised through the Academic Center for Exploratory Students (ACES).

To be guaranteed an interview for admission to the School of Pharmacy, the following criteria must be met:

- 1) Completed **all** courses at the University of Connecticut earning no grade below 2.0;
- 2) Earned a minimum 3.50 cumulative grade point average (GPA) in all re-

quired math and science classes;

- 3) Pharmacy College Admission Test score of 85% (www.pcatweb.info)
- 4) Earned a minimum grade of 2.7 in English requirements;
- 5) No repetition of a prerequisite course;
- 6) Completed a School of Pharmacy Professional Program application.

All other students will be considered for an interview and admission on a competitive basis.

Students receiving an interview should not assume that they will be admitted to the professional program.

Applications should be submitted after fall grades are posted, but on or before a February 1 deadline. Applications will begin to be reviewed in February and will continue on a space available basis. School of Pharmacy applications are available in the School of Pharmacy Professional Program Office.

Calculation of the Math/Science Prerequisite GPA: To calculate the cumulative math/science prerequisite GPA, the total grade points earned for courses are divided by the number of total credits. The total credits for the 11 specific math/science prerequisites equals 39. When approved course substitutions are taken, the courses are treated as substitutions and *not* as replacements for the specific prerequisite courses. The total number of credits is still 39.

Substitutions

Grades for MATH 1120Q and 1121Q (a total of 8 credits) will be averaged and substituted for 4 credits of MATH 1131Q. MATH 1120Q and 1121Q may *not* be used as replacements for MATH 1131Q.

CHEM 1124Q, 1125Q, and 1126Q (a total of 10 credits) will be averaged and substituted for 8 credits of CHEM 1127Q and 1128Q. CHEM 1124Q, 1125Q, 1126Q may *not* be used as replacements for CHEM 1127Q and 1128Q.

The same applies for other approved substitutions.

Physics

The required prerequisite for physics is PHYS 1300 (3 cr.)

With approval from the School of Pharmacy, PHYS 1201Q, 1401Q, 1501Q, etc. can be substituted for PHYS 1300.

However, taking another physics course (e.g. PHYS 1201Q, 1401Q, 1501Q, etc.) in addition to PHYS 1300 may be considered repetition of a prerequisite.

Advanced Placement

When AP work is applied toward prerequisites, the number of total prerequisite credits (39) is reduced by the number of credits earned by that AP work.

Rounding for GPA

The School of Pharmacy does not round when calculating grade point averages. For example, a 2.99 will not be rounded to a 3.00.

Communication Skills. It is essential that Pharmacy students have excellent written and oral communication skills. Students must be able to communicate effectively with patients, physicians and with other members of the health care team.

The academic version of the International English Language Testing System (IELTS) is required of all applicants and U.S. citizens or permanent residents for whom English is not the native language and/or primary language of instruction. A minimum score of 7.5 is required for admission to the program.

Scholastic Standards. Students admitted to the professional pharmacy program must maintain the following standards of scholastic achievement to continue and/or complete the program:

- 1) A minimum **semester** and **cumulative** grade point average of 2.0.
(Students are subject to dismissal if there is more than one semester in which they earn a semester or cumulative grade point average below 2.0.)
- 2) A minimum 2.0 grade point average in all required **Pharmacy** courses.
(Students are subject to dismissal if there is more than one semester in which they earn a semester grade point average below 2.0 in required Pharmacy courses.)
- 3) A minimum cumulative grade point average of 2.0 in all required Pharmacy courses is required to enroll in clinical clerkships/rotations.
- 4) A minimum cumulative grade point average of 2.0 is required for graduation.

In addition, to demonstrate effective written and oral communication skills in English, the student must receive a grade of 2.0 or above in *Interpersonal Skills Development* (PHRM 3008) and in *Pharmacy Practice Laboratory* (PHRM 5009, PHRX 5047) to continue into the clinical experience sequence.

All required Pharmacy courses must be taken for a grade (*i.e.* may not be taken

on Pass/Fail or Satisfactory/Unsatisfactory).

Failure to meet any of the requirements may result in dismissal of the student from the program.

The student has the right to appeal in writing to the Office of the Dean of the School of Pharmacy any dismissal decision.

Honors Program. Students in the School of Pharmacy may be eligible to participate in a variety of enrichment programs. These include independent research projects with a faculty mentor, the Honors Program, and the University Scholars Program. Each of these programs offers the motivated student a way of individualizing their intellectual environment to better meet their needs while providing distinction to their academic record. For more information on these programs, ask to speak with a Pharmacy Honors Advisor.

Physical Examination Requirements. All students by the end of the first semester in the professional phase of their program are required to have an initial physical examination including CBC and urinalysis. Additionally, all students are required to have Rubeola Titer; a Varicella Titer; a Rubella Titer (note: even though you may have already had measles and/or chicken pox as a child, you still need titers); a DT (Diphtheria/Tetanus) shot; Hepatitis B immunization (a series of three injections for Hepatitis B and mandatory post-titer level); and a PPD. The Tuberculin Test or PPD must be repeated annually. In addition, a medical release form must be signed annually. Rubella immunization is necessary if the titer is absent. You must have had an updated Tetanus immunization within the last 10 years.

Students may have the health requirements conducted by Health Services or may elect to have the physical examination and required tests performed by a private physician.

In addition, the School of Pharmacy will provide, in compliance with the OSHA Blood Borne Pathogen Standard, mandatory annual educational sessions for all students.

Transportation. Students must provide their own transportation to experiential sites during the professional program. They should allow for transportation expenses, which would include cost of gasoline and parking fees where necessary.

Health Insurance. All students in the professional phase of their pharmacy education are required to carry health insurance as stated in the University's health policy. It is the student's responsibility to present a completed Verification of Health Form to the Director of Experiential Education at the School of Pharmacy. This must be done **annually**, prior to the start of the third full week of classes. It is also the student's responsibility to re-present proof of coverage (by filling out a Verification of **University of Connecticut** Health Insurance Form) to the Director of Experiential Education in advance of the expiration date should it occur sometime in the middle of any semester.

Any medical expenses incurred by the student while participating in the clinical portion of the program will be assumed by the student.

Professional Liability Coverage. All students in the professional phase of their curriculum are required to carry specific professional liability (malpractice) coverage. You will automatically be billed for this on your University fee bill. Although the State of Connecticut has statutory protection for students in "field placement programs" (Chapter 53 of the Connecticut General Statutes), there are sites that will not accept this as adequate protection. Therefore, the School of Pharmacy has required all students to have the blanket University malpractice coverage.

Additional Degrees. Students wishing to take a second degree in another school or college should consult the associate dean of the School of Pharmacy early in their professional program.

Intern Registration. It is mandatory that all Pharmacy students register with the Connecticut Board of Pharmacy upon admission to the Pharmacy professional program. Failure to receive and maintain a valid Pharmacy intern card will result in students not being allowed to participate in experiential courses or any of the other practice component of the curriculum.

License to Practice Pharmacy. Any request for information concerning Connecticut internship training requirements and other qualifications for examination and licensure as a pharmacist should be addressed to The Board Administration, Commission of Pharmacy, State Office Building, Hartford, Connecticut. Students seeking licensure in other states, should contact the Boards of Pharmacy in those states.

Degree Requirements for the Bachelor of Science in Pharmacy Studies.

The Bachelor of Science in Pharmacy Studies is awarded after the completion of two years of pre-pharmacy and the first two years of pharmacy study in the professional program. The B.S. in Pharmacy Studies must be earned before entry into the last two years of the professional program. Upon recommendation of the faculty, the degree of Bachelor of Science in Pharmacy Studies is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned 137 credits; (2) completed all requirements for the first two years of the professional program; (3) completed at least 30 credits of courses defined as behavioral, social, and humanistic areas of knowledge; (4) satisfied the University's General Education Requirements; (5) earned at least a 2.0 grade point average for all calculable required pharmacy courses; and (6) earned a 2.0 grade point average for all calculable required Pharmacy courses. The B.S. in Pharmacy Studies does not entitle an individual to sit for a pharmacy licensing examination. Courses which satisfy (3) above can also be used to satisfy (4) above.

Degree Requirements for the Doctor of Pharmacy (Pharm.D.) The Doctor of Pharmacy is a professional degree, not a graduate degree. It is awarded after two years of pre-pharmacy studies and four years of study in the professional program. Upon recommendation of the faculty, the degree of Doctor of Pharmacy is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned 210 credits; (2) completed all requirements for the professional years and the Professional Program; (3) completed at least 30 courses defined as behavioral, social, and humanistic areas of knowledge; (4) satisfied the University's General Education Requirements; (5) earned at least a 2.0 grade point average for all calculable required pharmacy courses; and (6) earned a 2.0 grade point average for all calculable required Pharmacy courses. The Doctor of Pharmacy degree entitles an individual to sit for a pharmacy licensing examination. Courses which satisfy (3) above can also be used to satisfy (4) above.

Required Courses for the Professional Degree

I. General Education Requirements

The University Senate has adopted General Education Requirements in a variety of curricula areas, which must be satisfied as part of every degree program. These requirements are listed in the "Academic Regulations" section of this *Catalog*. The course requirements are those of the School of Pharmacy and also satisfy the University requirements.¹

School of Pharmacy Requirements

Mathematics and Science Courses

CHEM 1124Q, 1125Q, and 1126Q or CHEM 1127Q, 1128Q
CHEM 2443, 2444
BIOL 1107
PHYS 1300
MATH 1120Q and MATH 1121Q or MATH 1131Q
MCB 2000, 2610
PHAR 2002
PHAR 2003

Social Sciences Courses

ECON 1201
1000-level sociology or psychology or anthropology course

Computer Technology Competency

PHRM 4003 or PHRX 3030 satisfies the University computer technology competency exit expectations for the pharmacy major.

Information Literacy Competency

Information literacy competencies will be met through successful completion of program major courses.

Writing in the Major

PHAR 3087W, PHRM 4005W or PHRX 4001 will satisfy the writing in the major competency.

II. Required Courses and Recommended Sequences for the Pre-professional Years

¹ These courses need not be taken in the semester indicated, but must be completed during the first two years.

First College Year - First Semester: CHEM 1127Q; BIOL 1107; ECON 1201¹; MATH 1131Q

First College Year - Second Semester: CHEM 1128Q; ENGL 1010 or 1011; PHYS 1300 ; Arts and Humanities course from GER Content Area 1; Diversity course from GER Content Area 4

Second College Year - First Semester: CHEM 2443; PHAR 2002; Diversity course from GER Content Area 4; SOCI 1001^{1,2}; MCB 2610

Second College Year - Second Semester: CHEM 2444; PHAR 2003; GER W course; MCB 2000; Arts and Humanities course from GER Content Area 1

Total pre-professional credits - 64

III. The Professional Program for Students Entering the School of Pharmacy in Fall 2008

Students will be admitted to the Pharmacy Studies degree program after completion of the two-year pre-pharmacy program (64 credits) and acceptance by the Admissions Committee.

First Professional Year - 37 Credits

First Semester: PHRX 3000, 3001, 3002, 3006, 3020, 3030, 3050

Total credits - 17

Second Semester: PHRX 3003, 3007, 3011, 3021, 3031, 3032, 3040; 3 credits of Pharmacy Electives

Total credits - 20

Second Professional Year - 36 Credits

First Semester: PHRX 4010, 4020, 4030, 4031, 4040, 4041, 4050; 3 credits of Pharmacy Electives

Total credits - 18

Second Semester: PHRX 4000, 4001, 4011, 4021, 4042, 4043, 4044, 4051; 3 credits of Pharmacy Electives

Total credits - 18

Total credits for Bachelor of Science in Pharmacy Studies - 137

Doctor of Pharmacy - 73 Credits

Students must complete two additional years to earn the Pharm.D. with a total of 210 credits.

Third Professional Year - 37 Credits

First Semester: PHRX 5010, 5020, 5040, 5041, 5042, 5047, 5048; 3 credits of Pharmacy Electives

Total credits - 18

Second Semester: PHRX 5011, 5021, 5043, 5044, 5045, 5046; 3 credits of Pharmacy Electives

Total credits - 19

Fourth Professional Year - 36 credits

Students must have completed the B.S. in Pharmacy Studies and the first year of the Pharm. D. program

Rotating Professional Experiences (1 month = 4 credits) Required (one month each) 16 credits

Direct patient contact indicated by ^D

Course Numbers and (Credits)

PHRX 5100^D, (4 cr.), 5101 (4 cr.), 5102^D (4 cr.), 5103^D(4 cr.)

(may substitute Pediatrics or Geriatrics for Ambulatory Care and General Medicine)

Electives, minimum of 5 (one month each) 20 credits

At least 2 of the electives must be direct patient contact.

Direct patient contact indicated by ^D

All of the PHRX courses in the list are offered for 4 credits.

PHRX 5104^D, 5105^D, 5106^D, 5107^D, 5108^D, 5109^D, 5110^D, 5111^D, 5112, 5113, 5114, 5115, 5116, 5117, 5118, 5119, 5120, 5121, 5122, 5123^D, 5124^D, 5125^D, 5126^D, 5127^D, 5128^D, 5129^D, 5195, 5199; PHAR 3095, 3099

Total credits for Doctor of Pharmacy - 210

Exemption and Substitution. Students who desire to be excused from any of these requirements or to substitute other courses for those prescribed, should

consult the Associate Dean of the School. The Dean of the School of Pharmacy must approve such exemptions or substitutions. Any waivers or substitution for professional courses must be approved by the School of Pharmacy Curriculum Committee.

IV. The Professional Program for Students Entering the School of Pharmacy in Fall 2007

Students will be admitted to the Pharmacy Studies degree program after completion of the two-year pre-Pharmacy program (64 credits) and acceptance by the Admissions Committee.

The Professional Program

First Professional Year - 29 Credits

First Semester

PHRM 3001, 3002, 3003, 3005, 3006, 3007³; 3 credits of Electives⁴

Total credits - 14

Second Semester

PHRM 3007, 3008, 3009, 3010, 3011; PVS 4300

Total credits - 15

Second Professional Year - 33 Credits, First Semester

PHRM 4000, 4001, 4002, 4003C, 4004, 4006³

Total credits - 15

Second Semester

PHRM 4005W, 4006, 4007, 4008, 4009, 4010, 4011,

Total credits - 18

Total credits for Bachelor of Science in Pharmacy Studies - 126

Doctor of Pharmacy - 70 Credits

Students must complete two additional years to earn the Pharm.D. with a total of 196 credits.

Third Professional Year - 34 Credits

First Semester

PHRM 5000, 5001, 5002, 5003, 5004, 5005, 5006³; 3 credits of Electives⁵

Total credits - 15

Second Semester

PHRM 5006, 5007, 5008, 5009, 5010, 5011; 3 credits of Electives⁵

Total credits - 19

Fourth Professional Year - 36 Credits

Students must have completed the B.S. in Pharmacy Studies and the first year of the Pharm. D. program

Rotating Professional Experiences (1 month = 4 credits) Required (one month each) 16 credits

Direct patient contact indicated by ^D

PHRM 5100^D, 5101, 5102^D, 5103^D

(may substitute Pediatrics or Geriatrics for Ambulatory Care and General Medicine)

Electives, minimum of 5 (one month each) 20 credits

At least 2 of the electives must be direct patient contact.

Direct patient contact indicated by ^D

All of the PHRM courses in the list are offered for 4 credits.

PHRM 5104^D, 5105^D, 5106^D, 5107^D, 5108^D, 5109^D, 5110^D, 5111^D, 5112, 5113, 5114, 5115, 5116, 5117, 5118, 5119, 5120, 5121, 5122, 5123^D, 5124^D, 5125^D, 5126^D, 5127^D, 5128^D, 5129^D, 5195, 5199; PHAR 3095, 3099

Total credits for Doctor of Pharmacy - 196

Exemption and Substitution. Students who desire to be excused from any of these requirements or to substitute other courses for those prescribed, should consult the Associate Dean of the School. The Dean of the School of Pharmacy must approve such exemptions or substitutions. Any waivers or substitution for professional courses must be approved by the School of Pharmacy Curriculum Committee.

³ Register for the course each semester. A letter grade and one credit are issued in the spring semester.

⁴ These courses need not be taken in the semester indicated, but must be completed by the end of the second professional year if the student will not have 126 credits. ⁵ If student will not have 196 credits earned following the completion of the Fourth Professional Year, these elective credits must be taken. A total of 196 credits are necessary for the Pharm.D. degree.