

Pre-Pharmacy Administered through Chemistry

INFORMATION

Pharmacists are an integral part of any healthcare team. Primarily responsible for distributing the drugs prescribed by physicians, pharmacists must be well-versed in the indications, dosages, side-effects and interactions of medications. Therefore, a strong foundation in chemistry, biology and physics is essential to the field.

CAREER OPPORTUNITIES

In order to practice as a pharmacist, a license must be obtained. Pharmacists in all states are required to graduate from an accredited college of pharmacy and pass the North American Pharmacist Licensure Exam and/or the Multi-State Pharmacy Jurisprudence Exam. Once licensed, pharmacists have numerous career options. Retail pharmacy (working in drug stores and grocery store pharmacies) is the most prevalent career path. However, pharmacists are employed in a number of different capacities such as conducting research for pharmaceutical companies, formulating drugs into tablet, intravenous or other forms, monitoring patient drug therapy progress, working in health care facilities to educate both physicians and patients on drug developments and usage, and serving as faculty members at colleges and universities. Fueled by the growing population of elderly, increased demand for pharmaceuticals is expected to increase the demand for pharmacists. The need for pharmacists is especially great in the Northeastern Ohio region.

PROGRAM ADMISSIONS

The courses listed on the back side of this sheet fulfill the prerequisites set forth by the Northeastern Ohio Universities College of Pharmacy (NEOUCOP). Completion of the prerequisite courses as listed on this sheet is required for acceptance into the NEOUCOP Doctor of Pharmacy (PharmD) program, which is administered on the NEOUCOP campus in Rootstown, OH. Other admissions requirements are as follows:

- A grade of "C-" or better in all required courses
- A minimum grade point average (GPA) of 3.25, both overall and in math/science courses
- A minimum 50% percentile score on the Pharmacy College Admissions Test (PCAT)

Pursuit of a Bachelor's Degree

Completion of a Bachelor's degree is not required by NEOUCOP, but students are encouraged to complete the prerequisite courses en route to a Bachelor's degree (typically Chemistry or Biology). Pursuing a Bachelor's degree is recommended as it provides alternatives to students who decide not to pursue pharmacy as a career or are unable to gain acceptance into the PharmD program. Students who intend to pursue a degree must be aware of the additional general education requirements and major requirements outlined by Cleveland State in addition to the prerequisites required by NEOUCOP.

Preferential Admissions

NEOUCOP intends to admit 75 students each year. Cleveland

State, as a consortium member, has 15 reserved seats set aside each year for qualified Cleveland State students, defined as students who have completed a minimum of 30 credit hours at CSU. Students must complete all Cleveland State prerequisite courses, either as a Cleveland State course or a transfer course equivalent to the required Cleveland State course. Because science courses build upon one another, students are encouraged to take all science courses at Cleveland State. Applications to NEOUCOP are processed via the Pharmacy College Applications Service (PharmCAS). Please see www.pharmacas.org/collegesschools/schoolNEOUCompage.htm for more information, including deadline dates and procedures.

Students are encouraged to submit their application to NEOUCOP approximately one year prior to when they plan to enter the PharmD program. Specifically, consortium students should look to apply prior to October as admissions decisions are made on a rolling basis. Applications can be submitted without official PCAT scores and while courses are still in progress.

For more information, contact:

College of Science Advising Center
Cleveland State University
2121 Euclid Avenue MC 218B
Cleveland, OH 44115-2214
Phone: (216) 687-9321
E-mail: cosadvising@csuohio.edu
Website:
<http://www.csuohio.edu/sciences/neoucop.html>

Pre-Pharmacy

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Requirements of the College of Science: A minimum of 128 credit hours is required for a Bachelor of Science (B.S.) degree, of which 42 semester credit hours must be earned in 300 and/or 400 level courses. Specifics concerning these and other requirements are given in the Undergraduate Catalog, College of Science section.

General Education Requirements: All degree-seeking students are required to meet general education requirements. Students are responsible for ensuring that courses chosen satisfy these requirements and are encouraged to consult with their academic advisor. A comprehensive description of the requirements is available online at <http://www.csuohio.edu/academic/gened>.

NEOUCOP Required Pre-Professional Courses (Minimum Semester Hours Required)	CSU Course Equivalent (Credit Hours in Parenthesis)	
Biology and Other Life Science Sequence with Lab (8)	<ul style="list-style-type: none"> ▪ BIO 200 Introductory Biology I (3) ▪ BIO 201 Introductory Biology Laboratory I (1) ▪ BIO 202 Introductory Biology II (3) ▪ BIO 203 Introductory Biology Laboratory II (1) 	
Inorganic Chemistry Sequence with Lab (8)	<ul style="list-style-type: none"> ▪ CHM 261 General Chemistry I (4) ▪ CHM 266 General Chemistry Laboratory I (1) ▪ CHM 262 General Chemistry II (4) ▪ CHM 267 General Chemistry Laboratory II (1) 	
Organic Chemistry Sequence with Lab (8)	<ul style="list-style-type: none"> ▪ CHM 331 Organic Chemistry I (4) ▪ CHM 336 Organic Chemistry Laboratory I (2) ▪ CHM 332 Organic Chemistry II (4) ▪ CHM 337 Organic Chemistry Laboratory II (2) 	
General Physics Sequence (6)	<ul style="list-style-type: none"> ▪ PHY 231 College Physics I – Biomedical Applications (4)** OR PHY 221 College Physics I (5) OR PHY 241 University Physics I (5) OR PHY 243 University Physics I (5) OR PHY 243H University Physics I – Honors (5) ▪ PHY 232 College Physics II – Biomedical Applications (4)** OR PHY 222 College Physics II (5) OR PHY 242 University Physics II (5) OR PHY 244 University Physics II (5) OR PHY 244H University Physics II – Honors (5) 	
Biochemistry Sequence (6)	<ul style="list-style-type: none"> ▪ CHM 402 Biochemistry I (3) ▪ CHM 403 Biochemistry II (3) 	
Calculus (3)	<ul style="list-style-type: none"> ▪ MTH 181 Calculus I (4) OR MTH 181H Honors Calculus I (4) 	
Statistics (3)	<ul style="list-style-type: none"> ▪ MTH 147 Statistical Concepts with Applications (4)** OR PSY 311 Behavioral Science Statistics (4) OR SOC 354 Quantitative Sociological Research (4) 	
Economics (3)	Required by NEOUCOP	Recommended by CSU**
	ANY Economics Course	<ul style="list-style-type: none"> ▪ ECN 202 Principles of Microeconomics (3)
Literature or Composition (6)	ANY English Composition and/or Literature Courses	<ul style="list-style-type: none"> ▪ ENG 101 English I (4) ▪ ENG 102 English II (3) OR ENG 102H English II – Honors (3)
Speech or Communication (3)	ANY Speech or Communication Course	<ul style="list-style-type: none"> ▪ COM 101 Principles of Communication (4)
Psychology (3)	ANY Psychology Course	<ul style="list-style-type: none"> ▪ PSY 101 Introduction to Psychology (4)
General Education Electives and/or Additional Science (15)	ANY courses (other than courses used to fulfill the above requirements) in the areas of humanities, social science, business, computer literacy, and additional coursework in other prerequisite categories	Students should choose electives which also satisfy CSU General Education Requirements.

** Following the Cleveland State course recommendations provides the student with the best means to fulfill the requirements set by NEOUCOP, the opportunity to follow the sample course sequence for pre-pharmacy, and provides a more efficient path toward a baccalaureate degree.

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