



Newark College of Arts and Sciences / Ernest Mario School of Pharmacy 2+4 Pre-Pharmacy Curriculum

Program Administration Notes

Below are selected rules and regulations that govern the 2+4 Program at the Newark College of Arts and Sciences. For further information relating to the Program of Study, please contact the Office of Academic Services at the Ernest Mario School of Pharmacy.

Only students who apply directly from high school to the Program are eligible to be considered for admission. Applicants who have completed more than 12.0 credits of college-level coursework or who have been admitted to another academic program of study (even one at the Newark College of Arts and Sciences) are ineligible to apply. The official roster of students enrolled in the 2+4 Program is maintained in the Office of the Dean of the Ernest Mario School of Pharmacy.

- 1) Credit for AP coursework is awarded as follows. These rules are the same rules that govern the award of AP credit at the Ernest Mario School of Pharmacy.
 - a) A maximum of 8.0 credits of advanced standing of any kind will be awarded.
 - b) Credit for English courses will *only* be recognized for the purposes of satisfying Humanities / Social Science Elective credit. All students in the 2+4 Program are required to complete a two courses of College-level English Writing courses at Rutgers University.
 - c) Credit for Calculus will *only* be recognized as follows:
 - i. Grades of 4 or 5 need to be attained in both the Calculus BC test *and* the AB sub-score. This will allow for a full year of Calculus to be awarded. Please note that this will total 8.0 credit of transferred coursework and will reach the maximum number of AP Credits that will be awarded.
 - ii. Grades of 4 or 5 in the Calculus AB test only or the Calculus BC test only will permit the award of credit for *Unified Calculus I*, 50:640:121. Students who accept this credit will be required to complete the course *Unified Calculus II*, 50:640:122.
- 2) Credit for college-level coursework taken while in high school will be awarded based upon individual review of the coursework and are included in the 8 credits of advanced standing. The rules applied are the same rules that govern the award of AP credit at the Ernest Mario School of Pharmacy.
- 3) *It is the responsibility of each student to seek advising from the 2+4 Program Academic Advisor, Dr. James M. Schlegel, Professor, Department of Chemistry, at the Newark College of Arts and Sciences. Additional information regarding your standing in the Program is available from the Office of Academic Services at the Ernest Mario School of Pharmacy.*
- 4) The courses listed on this sheet reflect the minimum requirements to enter the professional years at the School of Pharmacy. Please be advised that other courses may be required by the Camden College of Arts and Sciences or the departments offering the courses in the form of pre-requisites.
- 5) Students need to attain grades of "C" or better in all core science and writing courses. Core science courses are defined as: *General Chemistry and Lab, Organic Chemistry and Lab, General Biology and Lab, and Mammalian Physiology*. Failure to achieve this requirement will result in action by the Scholastic Standing Committee of the Ernest Mario School of Pharmacy.
- 6) Students need to attain a Cumulative *and* Term GPA of at least 2.800 in order to remain in the 2+4 Program.
- 7) An evaluation of each student's progression in the 2+4 Program will be undertaken by the Scholastic Standing Committee at the Ernest Mario School of Pharmacy each semester. Should an action be taken by the Committee, a letter will be sent to your home and/or campus address informing you of the action and what options may be available to address the decision.
- 8) The Scholastic Standing Committee at the Ernest Mario School of Pharmacy reserves the right to decline admission to the First Professional (Third) Year of the Program based upon a student's overall academic achievement in the pre-professional course sequence.
- 9) Students must take a total of six (6) elective courses in the humanities and/or social sciences. Each course must be at least 3.0 credits in weight. Five of the six courses must be true humanities and/or social sciences. The final course must be either a Psychology or Sociology elective. Elective credit will be given for the majority of courses offered through such departments as History, English, Psychology, Sociology, and Classics.

Elective credit will not be given for:

- any of the core or "hard" science departments such as, but not limited to, Biological Sciences, Chemistry, Geology, or Physics.
- courses that are offered through the Departments of Mathematics or Computer Science.
- any course offered in any other discipline that discusses drugs, medicinal or healthcare, healthcare topics,

or healthcare related topics.

- any course that involves diet, nutrition, or disease.
- studio courses (that is, where a student plays an instrument, dances, draws, paints, or sculpts).
- correspondence courses.
- seminar courses except those offered through the Honors Program.
- internships or field work.

10) Students admitted to the 2+4 program who are selected for admission to the Newark College of Arts and Sciences Honors Program will take Honor English Composition I and II in lieu of English Composition I and II.

11) Students will be admitted to the Ernest Mario School of Pharmacy in New Brunswick to complete the professional curriculum (the last four years of the Doctor of Pharmacy program) if

- they have completed all of the required pre-professional coursework and demonstrated a proficiency in the core sciences that predicts success in the professional pharmacy program;
- they have maintained a minimum cumulative grade point average of 2.8 at the end of your first and second academic years with grades of C or better in the core science courses and labs. (Please note that all grades are used when calculating grade-point averages. Grades of D or F in science and math courses may prohibit your continuation in the 2+4 program regardless of cumulative GPA); and
- at the end of the second year, they have successfully completed a formal interview with a dean or faculty member of the Ernest Mario School of Pharmacy. The objective of the interview will be to determine that you have an appropriate understanding of the nature of the pharmacy profession, as well as the communication skills and ethical qualifications essential to the profession. Students will be emailed information during the Spring semester of the second year about how the interview will be scheduled.

Students not specifically admitted to the 2+4 Program who wish to pursue pharmacy would need to apply to the School of Pharmacy as a school-to-school transfer after two or more years of study (see <http://admissions.rutgers.edu/schooltoschool> for details and procedures to follow). The rules above apply only to students admitted to the 2+4 Program.

First Pre-Professional Year

First Term

Class Name	Class No.	Cred. Hrs.
General Biology I	21:120:101	4
General Biology Lecture	21:120:101 LC	0
General Chemistry I	21:160:115	4
General Chemistry Lab	21:160:113	1
English Composition I	21:350:101	3
Calculus I or II ¹	21:640:135 or 136	4
		<u>16</u>

Second Term

Class Name	Class No.	Cred. Hrs.
General Biology II	21:120:102	4
General Biology Lecture	21:120:102 LC	0
General Chemistry II	21:160:116	4
General Chemistry Lab	21:160:114	1
English Composition II ²	21:350:102	3
Humanities/Soc. Sci. Elective	21: __ : __	3
Humanities/Soc. Sci. Elective	21: __ : __	3
		<u>18</u>

¹ Every student will need to take Calculus. Students who have taken Calculus I in high school would need to take Calculus II.

² Please note that students must take two writing courses.

Second Pre-Professional Year

First Term

Class Name	Class No.	Cred. Hrs.
Organic Chemistry I	21:160:335	4
Intro to Economics-Micro	21:220:101	3
General Physics I	21:750:203	3
Intro. to Physics Lab	21:750:205	1
Principles of Psychology	21: 830:101 or 102	3
Humanities/Soc. Sci. Elective	21: __ : __	3
		<u>17</u>

Second Term

Class Name	Class No.	Cred. Hrs.
Organic Chemistry II	21:160:336	4
Organic Chemistry Lab	21:160:331	2
Human Physiology	21:120:240	3
Statistical Methods	21:220:231	3
Humanities/Soc. Sci. Elective	21: __ : __	3
Humanities/Soc. Sci. Elective	21: __ : __	3
		<u>18</u>

Students enrolled in the 2+4 Program need to successfully complete all coursework noted above by the end of the Spring semester of the second year from the date of admission to be eligible to enter the Ernest Mario School of Pharmacy at the New Brunswick / Piscataway Campus for the First Professional (Third) Year. Students who do not meet this requirement are no longer eligible to pursue the 2+4 Program.

In addition, all students intending to enter the First Professional (Third) Year are expected to complete an interview with a faculty member at the Ernest Mario School of Pharmacy. Information regarding this part of the entrance process will be provided during the Spring semester prior to admission eligibility.

First Professional Year

First Term

Class Name	Class No.	Cred. Hrs.
Introductory Biochemistry and Molecular Biology	01:694:301	3
Pathophysiology	30:718:304	3
Intro. to Pharmaceutics	30:721:301	3
Pharmacy Practice Management	30:725:308	3
Intro. to Pharmaceutical Care	30:725:320	4
Professional Elective 1	30: __ : __	2
		<u>18</u>

Second Term

Class Name	Class No.	Cred. Hrs.
Molecular Biology and Pharmaceutical Biotechnology	30:158:315	3
Pharmaceutical Chemistry	30:715:306	3
Introduction to Pharmacology	30:718:320	3
Drug Delivery I and Lab	30:721:320	3
Principles of Pharmaceutical Economics	30:725:340	3
Concepts in Pharmacy Practice	30:725:329	1
Professional Elective 2	30: __ : __	2
		<u>18</u>

Summer Term

Class Name	Class No.	Cred. Hrs.
Introductory Practice Experience	30:725:330	2

(over please)

Second Professional Year

<i>First Term</i>			<i>Second Term</i>		
Class Name	Class No.	Cred. Hrs.	Class Name	Class No.	Cred. Hrs.
Pharmaceutical Microbiology	30:158:420	3	Medicinal Chemistry II	30:715:410	3
Medicinal Chemistry I	30:715:409	3	Pharmacology II	30:718:406	2
Drug Information and Literature Evaluation	30:725:470	3	Introduction to Biopharmaceutics & Pharmacokinetics	30:721:430	3
Drug Delivery II and Lab	30:721:420	3	Poison Management & Drug Abuse	30:725:415	3
Cardiopulmonary Therapeutics	30:725:460	3	Infectious Disease Therapeutics	30:725:475	3
Pharmacology I	30:718:405	3	Professional Elective 3	3 : : _	2
		<u>18</u>			<u>17</u>
<i>Summer Term</i>					
Class Name	Class No.	Cred. Hrs.			
Intermediate Practice Experience	30:725:480	2			

Third Professional Year

<i>First Term</i>			<i>Second Term</i>		
Class Name	Class No.	Cred. Hrs.	Class Name	Class No.	Cred. Hrs.
Clinical Pharmacokinetics	31:725:555	4	Pharmacy Law & Bioethics	31:725:545	4
Clinical Immunology / Hematology / Oncology Therapeutics	31:725:560	3	Endocrine Therapy & Special Patient Populations	31:725:590	3
Renal / GI / Nutrition Therapy	31:725:565	3	Pharmacy Communications II	31:725:587	2
Physical Assessment	31:725:570	2	Self Care and Home Care	31:725:550	4
Pharmacy Communications I	31:725:585	2	Neuropsychiatric Therapeutics	31:725:595	3
Professional Elective 4	3 : : _	2	Professional Elective 5	3 : : _	2
		<u>16</u>			<u>18</u>

All curriculum requirements of the first five years must be successfully completed before students may register for any Terminal Year rotations.

Students need to complete at least seven (7) experiential rotations during the Terminal Year of the Program. Additional rotations may be completed after consultation with the Vice-Chair of Experiential Programs. Note Fourth Professional Year begins in the summer following Spring of the Third Professional year (see below).

Fourth Professional Year

<i>Summer Session</i>					
Class Name	Class No.	Cred. Hrs.			
Adv. Practice Experience I	31:725:791	5			
Adv. Practice Experience II	31:725:792	5			
Adv. Practice Experience III	31:725:793	5			
		<u>15</u>			
<i>First Term</i>			<i>Second Term</i>		
Class Name	Class No.	Cred. Hrs.	Class Name	Class No.	Cred. Hrs.
Adv. Practice Experience IV	31:725:794	5	Adv. Practice Experience VII	31:725:797	5
Adv. Practice Experience V	31:725:795	5	Adv. Practice Experience VIII	31:725:798	5
Adv. Practice Experience VI	31:725:796	5	Adv. Practice Experience IX	31:725:799	5
		<u>15</u>	Student Portfolio	31:725:xxx	2
					<u>17</u>