

#2160
**BIOLOGY: PRE-PROFESSIONAL/
BIOTECHNOLOGY TRACK**
Science & Math Degree

NOTES:

This is an unofficial document and should be used for academic planning purposes only. All students are required to see their Academic Advisor each semester to discuss and approve their selection of courses before they register. Due to continual program revisions mandated by accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisor when selecting courses. If you need the name of your academic advisor, contact the Biology/Chemistry Department, 973-328-5360.

The Pre-professional/Biotechnology Track is intended for students with strong math and science skills planning to transfer into a B.S. in Chemistry, Pharmacy, Biotechnology or professional Dental, Medical, Veterinary programs or related field.

To determine the transferability of your courses to participating NJ Colleges & Universities, visit the NJ Transfer site at www.njtransfer.org.

Science courses completed by students prior to entering the program must be less than seven years old. If the science courses exceed the seven-year limit, students must prove their competency by testing, or they must retake the courses.

Note: All developmental Math courses must be completed prior to enrolling in the core science courses. Please see the course catalog for English prerequisites.

*See back for more information.

BIOLOGY: PRE-PROFESSIONAL/BIOTECHNOLOGY TRACK**Science & Math Degree****#2160****Suggested Sequence by Semester***This suggested sequence does not include any required developmental courses.**Degree completion time may vary depending upon the number of credits taken each semester.*

SEMESTER I			CREDITS	SEMESTER II			CREDITS
English Composition I	ENG 111	3		English Composition II	ENG 112	3	
General Biology I	BIO 121	4		General Biology II	BIO 122	4	
Precalculus	MAT 123	4		Analytic Geometry & Calculus I	MAT 131	4	
General Chemistry I Lecture	CHM 125	3		General Chemistry II Lecture	CHM 127	3	
General Chemistry I Lab	CHM 126	<u>1</u>		General Chemistry II Lab	CHM 128	<u>1</u>	
		TOTAL	15			TOTAL	15
SEMESTER IV				SEMESTER IV			
General Education Elective		3		General Education Elective		3	
General Psychology	PSY 113	3		Organic Chemistry II Lecture	CHM 233	3	
Organic Chemistry I Lecture	CHM 231	3		Organic Chemistry II Lab	CHM 234	1	
Organic Chemistry I Lab	CHM 232	1		Humanities Elective		3	
Biology Elective		4		Math/Science/Technology Elective		<u>3</u>	
Social Science Elective		<u>3</u>					
		TOTAL	17			TOTAL	13

MATH/SCIENCE/TECHNOLOGY

MATHEMATICS: Students demonstrating proficiency in MAT 123 Pre-Calculus are encouraged to take MAT 131 Analytic Geometry and Calculus I followed by MAT 124 Statistics (or MAT 130, Probability and Statistics) or MAT 132 Analytic Geometry and Calculus II. You may use an additional Math class as an elective in the Math/Science/Technology category.

SCIENCE/TECHNOLOGY: Consult the General Education course list for approved courses in Science and Technology.

If you do not pass the Technology Literacy Competency exam, you must take one of the courses in Technological Competency or Information Literacy listing from the General Education course list. This course can be used to fulfill a General Education Math/Science/Technology elective.

GENERAL EDUCATION ELECTIVES: Please select any courses from the approved list of General Education courses. Students who plan to transfer to a B.A. (Bachelor of Arts) program should take COM 109, Speech Fundamentals, since this is required for that degree. Biotech students are strongly recommended to take MAT 132 or BIO 201. [Click here for the most recent General Education course list.](#)

HUMANITIES: Please select a Humanities course from the General Education course list.

SOCIAL SCIENCE: Please select a Social Science course from the General Education course list.

BIOLOGY ELECTIVES: Select from the following courses:

BIO 201 Genetics (offered Spring only)

BIO 202 Ecology (offered Fall only)

BIO 215 Microbiology

BIO 223 Cell and Molecular Biology (offered Fall only)

CHM 212 Biochemistry (offered Spring only)

*For students interested in biotechnology, please see page 3.

HONORS COURSES: BIO 121, BIO 122, and BIO 202 offer selected sections with an honors option. Consult with your Academic Advisor for more information.

NOTES:

- Students will not receive credit towards graduation for more than one of the following courses: MAT 124 and MAT 130.
- BIO 101 and BIO 102, Anatomy & Physiology I & II cannot be substituted for the Biology Elective.
- BIO 233 Independent Study in Biology does not fulfill any of the science requirements in Biology.

CCM Transfer Equivalencies for BS in Biotechnology

Students interested in **William Paterson University (WPU)** should take:

- BIO 122 General Biology II (4 CR) - although Biology is not required, it is a pre-requisite for BIO 201 Genetics (which is a required course at WPU).
- Social Science/Humanities Elective; two semesters of a foreign language are required.
- MAT 132 Calculus II or MAT 130 Probability and Statistics
- Humanities Elective- two semesters of a foreign language are required.
- Bio electives (4 CR) consult with WPU for specific Biology electives required.
- PHY 125/126 and PHY 127/128 General Physics I & II (these courses are not required as part of the CCM A.S. degree) however, they can be taken as Gen. Ed. or Math/Science/Technology electives.

Students interested in **Rutgers University** should take:

- BIO 215 Microbiology
- MAT 132 Calculus II
- BIO 201 Genetics; recommended for preparation for Molecular Genetics
- Bio electives (4 CR) consult with Rutgers for specific Biology electives required.
- PHY 125/126, and PHY 127/128 General Physics I & II must be taken together to transfer (these courses are not required as part of the CCM A.S. degree), however they can be taken as Gen. Ed or Math/Science/Technology Electives

Students interested in **Fairleigh Dickinson University (FDU) - Metro Campus only** should take:

- BIO 202 Ecology
- BIO 201 Genetics
- Bio electives (4 CR) consult with FDU for specific Biology electives required.
- MAT 131 Calculus I is the highest level of Math needed.
- PHY 125/126, and PHY 127/128 General Physics I & II (these courses are not required as part of the CCM A.S. degree), however they can be taken as Gen. Ed or Math/Science/Technology Electives

Although not transferrable to any of the above four-year universities, **Analytical Chemistry – Instrumental Analysis, CHM 218**, is strongly suggested. This course will provide students with hands-on skills that may be applicable for future employment and/or research at the intended transfer institution.