

# Biological Sciences

## Degree Type

Associate in Science

## Day Program

The Associate of Science Degree in Biological Sciences provides students with the first two years of a bachelor degree in biology in preparation for careers in medicine, healthcare, research, biotechnology, biomedical engineering and education. Students receive a strong foundation in scientific language and methodology, an understanding of the physical world, and how to apply these concepts through working in an inquiry based learning environment. The program is designed with student projects embedded in classes, as well as external research opportunities through grants and internships. Students should have strong reading and math skills, be aware of the extra hours (in the laboratory and at home) it takes to pursue project-based learning, and the advantage of this teaching style for developing critical thinking skills.

Our core courses all meet equivalent standards for transfer to most universities and colleges. However some electives may only be transferred as Discovery Science credit. Students need to work closely with the Program Coordinator while at NCC and decide early which degree and four-year college/university he/she plans to attend to make the advising process more effective.

Technical Standards: Please refer to the Technical Standards section for details regarding this program.

All students in this degree area are required to take BIOL107N or BIOL105N, CHEM130N and 131N, BIOL215N and a class that can fulfill BIOL270N requirements. Note BIOL105N may not transfer as Biology equivalent everywhere or qualify students for intern opportunities.

\*Students who do not test directly into MATH120N Pre-Calculus may substitute MATH110N Algebra II/Trig for NCC graduation requirements. Note that MATH120N is a pre/co-requisite of CHEM131N General Chemistry II and MATH106N Statistics is a pre/co-requisite of BIOL230N Genetics.

Students with placement test scores greater than MATH120N are encouraged to take MATH210N Calculus I to fulfill MATH requirements for the degree. Upon the completion of the Associate of Science degree in Biological Sciences, graduates will be able to:

1. Communicate effectively and fluently: read with comprehension; listen, clarify and follow directions; speak and write competently. Be able to draw conclusions, present and defend findings.
2. Develop skills in reflection, analysis, logical reasoning, and evaluation to formulate judgments, reach conclusions, and solve problems.
3. Apply appropriate mathematical processes to problems found in the physical and biological science by utilizing quantitative and qualitative data and applying scientific principles and methods.
4. Utilize technology to locate, evaluate, organize, generate data and utilize information accurately and responsibly and draw logical conclusions.
5. Acquire knowledge and skills that can be applied to more effectively function as an informed and responsible citizen.
6. Demonstrate an understanding of the theoretical principles, concepts and their application in a range of disciplines in the physical and biological sciences.
7. Perform and utilize a wide variety of laboratory techniques for determining results in physical and biological sciences.
8. Generate and maintain increasingly sophisticated laboratory documents, including laboratory notebooks and research papers. Graduates will also be able to demonstrate competency of the general education outcomes.

Students must consult an advisor at NCC and chosen transfer college(s) for guidance about course selection. Careful planning is required to ensure that mathematics and science courses will fulfill bachelor degree requirements. Students are encouraged to use open electives to best suit their transfer needs.

## First Year - Fall Semester

Item #	Title	Class Hours	Lab Hours	Credits
BIOL107N	Principles of Biology: Molecular and Cellular	3	3	4
CHEM130N	General Chemistry I	3	3	4
ENGL101N	College Composition	4	0	4
	MATH120N or MATH210N			4

## First Year - Spring Semester

Item #	Title	Class Hours	Lab Hours	Credits
	BIOL108N or Science/Math Elective			4
CHEM131N	General Chemistry II	3	0	4
	English/Communications Core and Elective Requirements			3
MATH106N	Statistics I	4	0	4

## Second Year - Fall Semester

Item #	Title	Class Hours	Lab Hours	Credits
BIOL215N	Microbiology	3	3	4
	BIOL220N or Science/Math Elective			4
PSYC101N	Introduction to Psychology	3	0	3
	Science/Math Elective			3-4

## Second Semester - Spring Semester

Item #	Title	Class Hours	Lab Hours	Credits
BIOL270N	Advanced Topics in Biology	3	2	3-4
BIOL230N	Genetics	3	3	4
	History/Political Science			3
	Humanities/Fine Arts/Philosophy or Global Awareness			3
	Open Elective or SCIENCE/MATH Elective			3-4
<b>Total Credits</b>				<b>61-64</b>