



**SMART CHOICE**



**NORTHEASTERN  
STATE UNIVERSITY**

*Gregg Wadley College of Science & Health Professions*

## Cell and Molecular Biology (AS Biology – BS Cell and Molecular Biology)

**The Cell and Molecular Biology** degree provides a diverse background in biological principles with a concentration in biotechnology and molecular biology. As a biology major you develop firm, solid groundwork in the sciences that will allow you to compete in the job market or go on to professional or graduate school. You will also learn critical thinking skills, organizational skills, library skills and presentation skills which will benefit you in any profession you choose.

**Transferring to NSU is a seamless process.** Although you can transfer to NSU at any time in your academic career, the smoothest transition occurs if you have earned or will earn an AA or AS from TCC. This milestone will also meet your general education requirements at NSU (unless it is a specific NSU requirement for you to graduate). Within your AA or AS, make sure you complete the required general education courses at TCC including ENGL 1113, ENGL 1213, MATH 1513, plus CHEM 1315 and CHEM 1415.

**What it takes to complete a B.S. degree in Cell and Molecular Biology from NSU.** If you don't complete your AA or AS at TCC, you will need to meet NSU's specific general education requirements. You must complete at least 124 hours to earn a bachelor's degree. Of those hours, 60 must be from a university (4 year school; 30 hours required from NSU), 40 must be junior and senior (3000/4000) level, and half of the hours (50%) in your major must be from NSU. You must also be both English and computer proficient. This means that you must pass ENGL 1113 Composition I & ENGL Composition II with a "C" or better and pass the designated computer proficiency class if needed. Therefore, when you transfer to NSU, you will likely need around 60 more hours to earn your bachelor's degree.

**How do my TCC classes transfer to NSU?** Every class that you take at TCC will transfer to NSU. Every class you take at TCC will transfer to NSU. Each class counts in one of the following categories that make up a bachelor's degree: general education, major, minor, or free elective. Minors (18 hours) are a coherent set of courses in a discipline or interdisciplinary grouping other than a student's degree program. **This program does not require a minor.** Free electives can be selected from any academic area. They allow you to explore academic interests outside of your major while counting toward the 124 hours you need to graduate. If you completed a class at TCC that does not meet one of the other specific requirements, it will count as a free elective. If you complete more than 64 hours at the associate degree level, all courses will transfer to NSU, but may be counted as electives. You must have 60 hours from a four-year institution to meet state requirements for graduation with a baccalaureate degree.

**When can you start taking NSU classes?** You can begin taking classes at NSU while you are completing your AA or AS at TCC. This is called dual enrollment, many students do this each semester. Consult an NSU academic advisor and a financial aid counselor to see how dual enrollment can work for you.

## TCC Biology A.S. to NSU Cell and Molecular Biology B.S.

### Freshman Year at Tulsa Community College

Fall Semester	Spring Semester
BIOL 1224 Introduction to Biology for Majors	BIOL 1404 General Botany OR BIOL 1604 Zoology
ENGL 1113 Composition I	CHEM 1315 General Chemistry I
MATH 1513 Precalculus I	ENGL 1213 Composition II
HIST 1483 or 1493 U.S. History to the Civil War Era or Civil War Era to present	POLS 1113 American Federal Government
Required elective (PSYC, Social Sci, Foreign Language, or Fine Arts; PSYC 1113 recommended)	
<b>Total Credit Hours: 16</b>	<b>Total Credit Hours: 15</b>

Notes: Computer Concepts & Applications (CSCI 1203) may be required for students who do not demonstrate computer proficiency. See TCC Catalog.

### Sophomore Year at Tulsa Community College

Fall Semester	Spring Semester
BIOL elective (BIOL 1404 General Botany, BIOL 1604 Zoology, BIOL 2134 Human Anatomy, BIOL 2154 Human Physiology)	BIOL 2164 Microbiology
CHEM 1415 General Chemistry II	PHYS 1214 General Physics II <b>**course not required for TCC Biology degree but required for NSU degree</b>
PHYS 1114 General Physics I	COMM 1113 Public Speaking
Humanities Elective (3 hours)	Humanities Elective (3 hours)
<b>Total Credit Hours: 16</b>	<b>Total Credit Hours: 14</b>

Notes: \*\* General Physics II (PHYS 1214) is not required for the TCC Biology degree, but is required for the NSU Cell and Molecular Biology degree. This course is offered at TCC or could be taken at any 4 year university.

After completion of your fourth semester courses, have the TCC Registrar send an official transcript to the NSU Admissions Office. If you have completed all requirements for an Associate degree, make sure that designation is noted on your TCC official transcript before sending to NSU. If you have not completed the requirements for an Associate degree, talk with your TCC Academic Advisor about Reverse Transfer options to use NSU coursework to complete your TCC degree.

### Junior Year at Northeastern State University

Fall Semester	Spring Semester
BIOL 3114 Genetics	BIOL 3124 Cell Biology
CHEM 3123 Organic Chemistry I	BIOL 4002 Experimental Design OR BIOL 4412 Research in Biology
CHEM 3132 Organic Chemistry I lab	CHEM 3223 Organic Chemistry II
MATH 3513 Statistical Methods	CHEM 3232 Organic Chemistry II lab
Elective (3 hours)	Electives (6 hours)
<b>Total Credit Hours: 15</b>	<b>Total Credit Hours: 17</b>

### Senior Year at Northeastern State University

Fall Semester	Spring Semester
BIOL 4232 Molecular and Cellular Biology Laboratory	BIOL 4103 Developmental Biology
BIOL 4543 Molecular Biology	BIOL 4242 Trends and Issues in Molecular Biology
BIOL Electives 4 hrs. (BIOL 4164 Medical Microbiology strongly recommended)	BIOL 4354 Immunology
CHEM 4214 Biochemistry	BIOL 4621 Senior Seminar
Electives (3 hours)	BIOL Electives 3 hours
	Electives (2 hours)
<b>Total Credit Hours: 16</b>	<b>Total Credit Hours: 15</b>

Total hours transferred from Tulsa Community college: **61**

Total hours needed from a 4 year university to complete a Bachelor of Science in Biology – Cell and Molecular Biology: **63**

**Total Degree Plan Hours: 124**

For further information, contact Dr. Jessica Martin, Department Chair, Natural Sciences, 918-444-3830, [martini@nsuok.edu](mailto:martini@nsuok.edu)

<https://academics.nsuok.edu/naturalsciences/Degrees/Undergraduate/CellularEmphasis.aspx>