



SMART CHOICE

**NORTHEASTERN
STATE UNIVERSITY**

Gregg Wadley College of Science & Health Professions

2017 – 2018 Cell and Molecular Biology (AS Biotechnology – 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 have at least 124 hours completed to earn a BS 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 in your major must be from NSU. You must also be both English and computer proficient. This means that you must pass Composition I & 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 to complete around 60 more hours in order to earn your BS.

How do my TCC classes transfer to NSU? Every class that you have taken at TCC will transfer to NSU. Each class will count in one of the following categories that make up a bachelor degree: general education, major, minor, or free elective. You probably already know about general education and major classes but minors and free electives are unique to bachelor's degrees. A minor is 18 hours from an academic area of your choice and it is designed to complement your major. Your advisor will help you determine your minor and the classes you will take to complete it. Free electives are extremely flexible and can be selected from any academic area. They allow you to explore your academic interests outside of your major while counting toward the 128 hours you need to graduate. Most degree programs at NSU allow for some free electives. If you completed a class at TCC that does not meet one of the other specific requirements, it will count in this category, up to the first 64 hours. If you have completed more than 64 hours at the associate degree level, all courses will transfer to NSU, but only 64 hours will apply to your degree. This is because 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.

NOTE: A minimum grade of C must be earned for ENGL 1113, ENGL 1213. You must have a minimum of 64 credit hours in major level science courses with at least 50% being earned at NSU. You must also satisfy the university's computer proficiency policy.

**Biotechnology, AS Degree
Freshman Year at Tulsa Community College**

Summer Semester I	
MATH 1513	Precalculus I
Total Hours	3

Notes:

- The math requirement may be met through appropriate advanced placement or other test scores. See TCC Catalog.

Fall Semester		Spring Semester	
BIOL 1224	Introduction to Biology for Majors	BIOL 2164	Microbiology
BIOT 1113	Introduction to Biotechnology	BIOT 1315	Biotechnology Laboratory Methods and Techniques (spring only)
CHEM 1315	General Chemistry I	BIOT 2101	Biotechnology Quality Assurance (spring only)
ENGL 1113	English Composition I	ENGL 1213	English Composition II
		POLS 1113	American Federal Government ++ NSU online recommended
Total Hours	15	Total Hours	16

Notes:

- Computer Concepts & Applications (CSCI 1203) may be required for students who do not demonstrate computer proficiency. See TCC Catalog.
- ++ American Federal Government (POLS 1113) should be taken as an online course at NSU and transferred back to TCC for the Biotechnology degree. Completion of this course at NSU counts toward the 60 hour requirement from a 4 year school.

**Biotechnology, AS Degree
Sophomore Year at Tulsa Community College**

Fall Semester		Spring Semester	
BIOT 1534	Cell Culture Techniques (fall only)	BIOT 2335	Proteomics and Instrumentation (spring only)
BIOT 2246	Molecular Biology and Techniques (fall only)	HIST 1483 or 1493	US History to the Civil War Era or Civil War Era to present
CHEM 1415	General Chemistry II	Humanities Elective	3 hours
PSYC 1113	Introduction to Psychology ++ NSU online recommended	HUMN Humanities Elective	3 hours
Total Hours	18	Total Hours	14

Notes:

- Introduction to Psychology (PSYC 1113) should be taken as an online course at NSU and transferred back to TCC for the Biotechnology degree. Completion of this course at NSU counts toward the 60 hour requirement from a 4 year school.

Summer Semester at TCC		Fall Semester at TCC	
PHYS 1114	General Physics I **course not required for TCC Biotechnology degree but required for NSU degree	PHYS 1214	General Physics II **course not required for TCC Biotechnology degree but required for NSU degree
Total Hours	4	Total Hours	4

Notes:

- ** General Physics I (PHYS 1114) is not required for the TCC Biotechnology degree, but is required for the NSU Cell and Molecular Biology degree. This course may be taken at TCC. Physics I is not offered at the NSU Broken Arrow Campus. General Physics II (PHYS 1214) is not required for the TCC Biotechnology degree, but is required for the NSU Cell and Molecular Biology degree. **This course may be taken at TCC Fall semester, Junior year while concurrently enrolled at NSU.** Physics II is not offered at the NSU Broken Arrow Campus. Students choosing to meet their Physics requirements through coursework at TCC will complete 68 credit hours at TCC.

**Biology-Molecular Biology Emphasis, BS
Junior Year at Northeastern State University**

Fall Semester		Spring Semester	
BIOL 3114	Genetics	BIOL 3124	Cell Biology
CHEM 3123	Organic Chemistry 1	BIOL 4354	Immunology
CHEM 3132	Organic Chemistry 1 lab	CHEM 3223	Organic Chemistry 2
MATH 3513	Statistical Methods	CHEM 3232	Organic Chemistry 2 lab
Total Hours	12	Total Hours	13

**Biology-Molecular Biology Emphasis, BS
Senior Year at Northeastern State University**

Fall Semester		Spring Semester	
BIOL xxx	Directed Electives, 7 hours	BIOL 4621	Senior Seminar
CHEM 4214	Biochemistry	BIOL 4103	Developmental Biology
BIOL 4543	Molecular Biology	Free Electives	5 hours
BIOL 4232	Cell/Molecular Lab	BIOL 4410(2)	Research in Molecular Biology
		BIOL 4242	Trends and Issues in Molecular Biology
Total Hours	16	Total Hours	13

Total Degree Plan Hours 124 April 27, 2017

Total hours transferred from Tulsa Community college: 64

Total hours needed from a 4 year university to complete a Bachelor of Science in Cell and Molecular Biology: 60

For further information, contact Dr. Jessica Martin, Department Chair, Natural Sciences, 918-444-3830, martinj@nsuok.edu

Smartchoice Agreement

Tulsa Community College: Associate of Science in Biotechnology

Northeastern State University: Bachelor of Science in Cell and Molecular Biology

PROGRAM ARTICULATION AGREEMENT GUIDELINES

In accordance with the Oklahoma State Regents for Higher Education System wide Associate to Baccalaureate Articulation Matrix Project, TCC will adhere to the guidelines* below for developing Associate in Arts and Sciences degree program-to-Baccalaureate degree program articulation agreements:

- **All courses in the associate degree program will apply to the student's baccalaureate degree program, not simply transfer as electives**, provided the student completes the course work in the specified time frame.
- **Students will be able to complete the baccalaureate degree program in the same number of hours as required for a native student**, provided the student follows the sequence of both the associate degree program and the baccalaureate degree program.
- At least 60 hours are required at the baccalaureate degree-granting institution, and the number of hours required to complete both the associate degree program and the baccalaureate degree program are listed in the agreement.
- The requirements for the student, the sending institution, and the receiving institution are stated in the agreement and signed by officials of both institutions.
- The agreement is reviewed and updated regularly by both institutions.
- Students who complete an Associate in Arts/Science from an Oklahoma institution have met all Oklahoma General Education requirements. **Specific TCC General Education courses will be named in the agreement only as needed to fulfill requirements for the associate degree or if required as a pre-requisite for a course in the baccalaureate major.**

*Approved by the OSRHE Council on Instruction in November, 2004 and the President's AAC in December 2004.

Tulsa Community College and Northeastern State University


PROGRAM ARTICULATION AGREEMENT

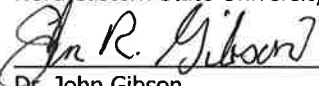
This agreement will be subject to the following provisions:

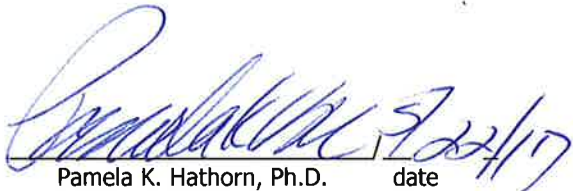
1. The student shall have graduated from TCC with an Associate in Science degree in Biotechnology, with a minimum total of sixty-six (66) credit hours (excluding physical education activity courses). A maximum of sixty-four (64) semester hours from a community college may be used to meet the minimum requirements for a baccalaureate degree.
2. The student shall earn a minimum of 60 semester hours at Northeastern State University (NSU), excluding physical education activity courses, of which forty (40) semester hours must be in 3000/4000 level courses for a minimum of one hundred twenty (124) semester hours for the baccalaureate degree.
3. The courses in the curriculum outlined in the attached Smart Choice (4-year roadmap) will be accepted as satisfying the general education and computer proficiency requirements for the Bachelor of Science in Cell and Molecular Biology.
4. The student shall have earned a minimum cumulative grade point average of 2.0 on a 4.0 scale (an average grade of "C" or better) at TCC.
5. TCC and NSU will cooperatively develop course-to-course equivalencies, transfer guides, and degree plans necessary for each student to successfully progress from the associate degree through the baccalaureate degree.


The student shall submit an application for admission and official transcripts indicating that the student has met the criteria of this agreement. The University's Director of Admissions will formally notify the student of his/her admission status.

Upon formal approval of this articulation agreement by the appropriate officials of the two institutions, each is free to publicize the terms herein. This agreement shall remain in effect until one or all of the institutions deem it necessary to modify or terminate the agreement.

 _____, 5.31.17
Pamela K. Fly, Ph.D. date
Associate Vice President for Academic Affairs
Northeastern State University

 _____, 5/16/17
Dr. John Gibson date
Provost, Southeast Campus, TCC
Tulsa Community College

 _____, 5/22/17
Pamela K. Hathorn, Ph.D. date
Dean, College of Science and Health Professions
Northeastern State University

 _____, 5/11/2017
Lyn Kent date
Dean, School of Science & Mathematics
Tulsa Community College

Attachments: Smart Choice (4 year roadmap)