

# transfer pathway guide

# 2019-2020

Associate of Science in Biology (TSAP) To

Bachelor of Science in Biological Sciences

## Overview

Completion of the following curriculum will satisfy the requirements for the **Associate of Science in Biology (TSAP)** degree at Ivy Tech Community College and leads to the **Bachelor of Science in Biological Sciences** degree at Northern Kentucky University.

## Applying to the IvyTech2NKU Program

Students can apply to participate in the pathway program by completing the online application on the NKU transfer webpage. Students must be enrolled in at least six credit hours at Ivy Tech, enrolled in an associate degree program, plan to transfer to NKU, and maintain a minimum 2.0 cumulative GPA at Ivy Tech.

## Degree Requirements for Ivy Tech

To earn a degree at Ivy Tech a student must successfully complete the required number of credits for the degree, attain a minimum GPA of 2.0 in the required technical and general education courses, and complete at least 15 degree credits in the curriculum as a regular student of Ivy Tech.

## Admission Requirements for NKU

Students completing an associate degree with a cumulative GPA of 2.0 or higher will be accepted into NKU. In addition, students must a grade of C- or better in all biology and common core support courses that count toward completion of major requirements at NKU.

## Degree Requirements for NKU

To earn a bachelor’s degree at NKU, students must complete a minimum of 120 credit hours with at least 45 credit hours numbered 300 and above. In addition, at least 25% of the credit hours required for the degree and the last 30 credit hours must be completed at NKU. Students must have an overall GPA of 2.0 and meet all requirements for the major. In some cases, students must complete a focus or minor as indicated on the pathway.

### Ivy Tech Community College of Indiana

#### Category 1: Transfer General Education Core (TGEC) Competencies

| **ITCC Course** | **Course or Category** | **Credits** | **NKU Course** | **Completed** |
| --- | --- | --- | --- | --- |
| ENGL 111 | English Composition | 3 | ENG 101 |  |
| COMM 101 | Fundamentals of Public Speaking | 3 | CMST 101 |  |
| MATH 211 | Calculus I | 4 | MAT 129 |  |
| PHYS 101 | Physics I | 4 | PHY 211 |  |
| PHYS 102 | Physics II | 4 | PHY 213 |  |
| BIOL 221 | Molecular Biology | 4 | BIO 400/400L |  |
| XXXX 102 | Foreign Language II (FREN, GERM, SPAN) | 3 | TBD XXX |  |
| XXXX XXX | Social and Behavioral Ways of Knowing | 3 | TBD XXX |  |
| XXXX XXX | Social and Behavioral Ways of Knowing orQuantitative Reasoning Elective | 3 | TBD XXX |  |
|  | **Subtotal General Education Core** | **31** |  |  |

TBS XXX means to be selected by Ivy Tech student

TBD XXX means to be determined by NKU based on course selected at Ivy Tech

Student may need to complete the Foreign Language I course before the Foreign Language II course.

#### Category 2: Degree Requirements for Associate of Science in Biology (TSAP)

| **ITCC Course** | **Course or Category** | **Credits** | **NKU Course** | **Completed** |
| --- | --- | --- | --- | --- |
| IVYT 111  | Student Success in University Transfer | 1 | UNV 100T |  |
| ENGL 112 | Exposition and Persuasion | 3 | ENG 102 |  |
| CHEM 105 | General Chemistry I | 5 | CHE 120/120L |  |
| CHEM 106 | General Chemistry II | 5 | CHE 121/121L |  |
| BIOL 105 | Biology I – Molecular and Cellular Processes | 5 | BIO 150/150L |  |
| BIOL 107 | Biology II – Diversity of Life | 5 | BIO 151/151L |  |
| Select 1:BIOL 222BIOL 240 | Select one course from the following: Genetics Ecology | 4 | BIO 349/349LBIO 304/304L |  |
| BIOL 279 | Capstone | 1 | BIO 399 |  |
|  | **Subtotal Category II Courses** | **29** |  |  |
|  | **Total Associate Degree Credit Hours** | **60** |  |  |

### Northern Kentucky University

All students must complete the core requirements for a Bachelor in Science in Biological Sciences.

#### Category 3: Core Requirements for the Bachelor of Science in Biological Sciences

| **NKU Course** | **Course** | **Credits** | **ITCC Course** | **Taken at ITCC** |
| --- | --- | --- | --- | --- |
| BIO 150/150L | Introduction to Biology I with lab | 4 | BIOL 105 | x |
| BIO 151/151L | Introduction to Biology II with lab | 4 | BIOL 107 | x |
| BIO 155 | Orientation to Biology | 1 |  |  |
| BIO 291W | Advanced Writing in Biology | 3 |  |  |
| BIO 304 | General Ecology | 3 | BIOL 240 | x |
| BIO 349/349L | Genetics | 4 | BIOL 222 |  |
| BIO 458 | Evolution of Organisms | 3 |  |  |
| BIO 491 | Comprehensive Examination | 0 |  |  |
| CHE 120/120L | General Chemistry I with lab | 4 | CHEM 105 | x |
| CHE 121/121L | General Chemistry II with lab | 4 | CHEM 106 | x |
| PHY 211/213 orPHY 220/222 | General Physics with Laboratory I and IIorUniversity Physics with Laboratory I and II | 8-10 | PHYS 101/102 | x |
| STA 205 | Statistical Methods | 3 | MATH 200 |  |
|  | Foreign Language (must complete a course at the 102 or higher level or CLEP or AP exam equivalency) | 0-6 |  | x |
|  | **Core Courses Credit Hours** | **13-14** |  |  |

Students will complete either BIOL 240 or BIOL 222 while at Ivy Tech.

Students must choose one of the following tracks for a Bachelor of Science in Biological Sciences. Course requirements for each track are in tables labeled Category IV.

* General Biology (B.S.) Track
* Cellular/Molecular/Genetics Track
* Ecology/Evolution/Organismal Track
* Forensic Science Track
* Pharmaceutical Sciences Track

#### Category 4: Requirements for the General Biology Track

| **NKU Course** | **Course** | **Credits** | **ITCC Course** | **Taken at ITCC** |
| --- | --- | --- | --- | --- |
| BIO 304L | Ecology Laboratory | 1 | BIO 240 |  |
| TBS XXX | Select one course from the cellular/molecular/genetics group | 3-4 |  |  |
| TBS XXX | Select one course from the ecology/evolution/organismal group | 3-4 |  |  |
| BIO XXX | Select two BIO electives | 7-8 |  |  |
| CHE 310/310L | Organic Chemistry I | 4 | CHEM 211 |  |
| CHE 311/311L | Organic Chemistry II | 3-4 | CHEM 212 |  |
| MAT 112 orMAT 128 or MAT 129 | Applied Calculus orCalculus A orCalculus I | 3-4 | MATH 211 | x |
|  | Additional credit hours to meet 120 credit hour graduation requirement with 45 credit hours at the 300/400 level | 21-26 |  |  |
|  | **Additional NKU Credit Hours** | **46-47** |  |  |
|  | **Total Bachelor Degree Credit Hours** | **120** |  |  |

TBS XXX means to be selected by Ivy Tech student

#### Category 4: Requirements for the Cellular/Molecular/Generics Track

| **NKU Course** | **Course** | **Credits** | **ITCC Course** | **Taken at ITCC** |
| --- | --- | --- | --- | --- |
| BIO 302/302L | General Microbiology | 4 |  |  |
| BIO 400/400L orBIO 436 | Advanced Molecular Biology orAdvanced Biology of the Cell | 3-4 | BIOL 221 | x |
| TBS XXX | Select two courses from the cellular/molecular/genetics group | 6-8 |  |  |
| CHE 310/310L | Organic Chemistry I | 4 | CHEM 211 |  |
| CHE 311/311L | Organic Chemistry II  | 4 | CHEM 212 |  |
| CHE 482 | Biochemistry I | 3 |  |  |
| CHE 483 | Biochemistry II | 3 |  |  |
| ENV 350 | Environmental Toxicology | 3 |  |  |
| MAT 112 orMAT 128 or MAT 129 | Applied Calculus orCalculus A orCalculus I | 3-4 | MATH 211 | x |
|  | Additional credit hours to meet 120 credit hour graduation requirement with 45 credit hours at the 300/400 level | 17-20 |  |  |
|  | **Additional NKU Credit Hours** | **46-47** |  |  |
|  | **Total Bachelor Degree Credit Hours** | **120** |  |  |

TBS XXX means to be selected.

#### Category 4: Requirements for the Ecology/Evolution/Organismal Track

| **NKU Course** | **Course** | **Credits** | **ITCC Course** | **Taken at ITCC** |
| --- | --- | --- | --- | --- |
| BIO 342 | Biometry | 3 |  |  |
| BIO 304L | Ecology Laboratory | 1 |  |  |
| TBS XXX | Select four courses from the ecology/evolution/organismal group | 12-16 |  |  |
| CHE 310/310L | Organic Chemistry I | 4 | CHEM 211 |  |
| CHE 311/311L orGEO 418 | Organic Chemistry II orGeographic Information Systems | 4 | CHEM 212 |  |
| MAT 112 orMAT 128 or MAT 129 | Applied Calculus orCalculus A orCalculus I | 3-4 | MATH 211 | x |
|  | Additional credit hours to meet 120 credit hour graduation requirement with 45 credit hours at the 300/400 level | 18-23 |  |  |
|  | **Additional NKU Credit Hours** | **46-47** |  |  |
|  | **Total Bachelor Degree Credit Hours** | **120** |  |  |

TBS XXX means to be selected.

#### Category 4: Requirements for the Forensic Science Track

| **NKU Course** | **Course** | **Credits** | **ITCC Course** | **Taken at ITCC** |
| --- | --- | --- | --- | --- |
| BIO 342 | Biometry | 3 |  |  |
| BIO 302/302L | General Microbiology | 4 |  |  |
| BIO 320/320L | Entomology | 4 |  |  |
| BIO 400/400L | Advanced Molecular Biology | 4 | BIO 221 | x |
| BIO 455 orCHE 350/350L | Scanning Electron Microscopy orInstrumental Analysis | 3-5 |  |  |
| CHE 310/310L | Organic Chemistry I | 4 | CHEM 211 |  |
| CHE 311/311L | Organic Chemistry II  | 4 | CHEM 212 |  |
| CHE 340/340L | Analytical Chemistry (need additional lab hours with CHEM 215) | 5 | CHEM 215 |  |
| CHE 482/482L | Biochemistry I | 4 |  |  |
| JUS 101 | Introduction to Criminal Justice | 3 | CRIM 101 |  |
| JUS 204 | Criminal Investigation | 3 | CRIM 204 |  |
| MAT 129 | Calculus I | 4 | MATH 211 | x |
|  | Additional credit hours to meet 120 credit hour graduation requirement with 45 credit hours at the 300/400 level | 7-10 |  |  |
|  | **Additional NKU Credit Hours** | **46-47** |  |  |
|  | **Total Bachelor Degree Credit Hours** | **120** |  |  |

TBS XXX means to be selected.

#### Category 4: Requirements for the Pharmaceutical Sciences Track

| **NKU Course** | **Course** | **Credits** | **ITCC Course** | **Taken at ITCC** |
| --- | --- | --- | --- | --- |
| BIO 302/302L | General Microbiology | 4 |  |  |
| BIO 425/425L | Advanced Human Anatomy and Physiology I | 4 |  |  |
| CHE 310/310L | Organic Chemistry I | 4 | CHEM 211 |  |
| CHE 311/311L | Organic Chemistry II  | 4 | CHEM 212 |  |
| CHE 482 | Biochemistry I | 3 |  |  |
| MAT 112 or MAT 129 | Applied Calculus orCalculus I | 3-4 | MATH 211 | x |
|  | Pharmacy School Coursework | 30-39 |  |  |
|  | **Additional NKU Credit Hours** | **49-59** |  |  |
|  | **Total Bachelor Degree Credit Hours** | **122-132** |  |  |

TBS XXX means to be selected.

Pharmacy schools do not require students to complete a bachelor’s degree prior to admission. The pharmaceutical sciences track is designed to enable students interested in applying to pharmacy school early (generally after their third year) to complete a bachelor’s degree by transferring coursework from the pharmacy school back to satisfy the remaining requirements for graduation. Due to the fact that pharmacy schools have a varied list of prerequisites and due to the complexity of the pharmaceutical sciences track, students need to work closely with their NKU academic advisor to ensure success. Should a student decide not to attend pharmacy school after their third year, they can complete the requirements for the cellular/molecular/genetics track during their fourth year. In order to complete the requirements for graduation, the student will need to complete 30-39 credits of approved coursework in a pharmacy school which has a pathway agreement with NKU.

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