

Undergraduate Catalog Program Template for Transfer Single Articulation Pathways (TSAP) Programs

Program: Biology

Degree: B.S.

I. Introduction

- a. The study of biology helps students prepare for careers in research, teaching, industry, government, medicine, medical technology, and other health-related fields. Biology is one of the most interdisciplinary of all the sciences. In addition to biology, this program requires a broad background in chemistry, physics, and mathematics. This background enables the biologist to study the evolution of life; manifestations of life from the level of viruses, bacteria, and individual cells to the structure and function of organisms; and interactions of living organisms with each other and their environment.
- b. [Department of Biology](#)
- c. **Student Learning Outcomes**
 - i. Upon completion of this Biology degree, students will:
 1. demonstrate comprehension of basic biological principles and theories, and an ability to apply those theories and principles to problem solving
 2. demonstrate knowledge of the scientific method, and be able to apply that knowledge to problem solving
 3. demonstrate the ability to critically evaluate biological information
 4. demonstrate the basic knowledge and experience of field and laboratory work, and be able to communicate the results of an investigation

- d. [TSAP information](#)

II. Program Delivery

- a. This program is available on-campus

III. Declaring This Major

- a. Declare this major within the [Department of Biology](#)

IV. General Requirements

- a. [Degree Requirements](#)
- b. [General Education Requirements](#)
- c. [Overlapping Courses](#)
- d. [College Graduation Requirements](#)
- e. [Academic Regulations](#)

V. Program Requirements

- a. A maximum of 6 credits in BIOL 29500 or 59500
- b. All biology courses applied toward graduation must be completed within 10 years from the time the first biology course was completed
- c. **General Education Requirements:** The Indiana Statewide General Education Core is satisfied as part of the TSAP program. The Purdue Fort Wayne General Education Capstone Course (Category C8) is included in your major requirements.

d. Listing of Major courses and supporting courses required at PFW:

- i. Core (Major) Courses: Credits 23
 1. [BIOL 21700 - Intermediate Ecology](#) Cr. 3. (Ivy Tech TSAP If needed or Elective)
 2. [BIOL 21800 - Genetics and Molecular Biology](#) Cr. 4. (If needed or Elective)
 3. [BIOL 21900 - Principles of Functional Biology](#) Cr. 4.
 4. [BIOL 49100 - Senior Biology Seminar](#) Cr. 3.
- ii. Supporting Courses
 1. Calculus and Statistics: Credits 9
 - a. [STAT 24000 - Statistical Methods for Biology](#) Cr. 3.
 - b. [STAT 34000 - Elementary Statistical Methods II](#) Cr. 3.
 2. Chemistry: Credits 16
 - a. One of the following sequences
 - b. [CHM 25400 - Organic Chemistry Laboratory](#) Cr. 1.
 - c. [CHM 25500 - Organic Chemistry](#) Cr. 3.
 - d. [CHM 25600 - Organic Chemistry](#) Cr. 3.
 - e. [CHM 25800 - Organic Chemistry Laboratory](#) Cr. 1.
 - OR
 - f. [CHM 25400 - Organic Chemistry Laboratory](#) Cr. 1.
 - g. [CHM 26100 - Organic Chemistry](#) Cr. 3.
 - h. [CHM 25800 - Organic Chemistry Laboratory](#) Cr. 1.
 - i. [CHM 26200 - Organic Chemistry](#) Cr. 3.
 3. Physics: Credits 8 (Ivy Tech TSAP requires Physics)
 - a. [PHYS 22000 - General Physics](#) Cr. 4.
 - b. [PHYS 22100 - General Physics](#) Cr. 4.
- iii. Biology Elective Courses: Credits 16
 1. Take at least one course *with a laboratory* from each of the A and B elective course lists below.
 2. The A elective courses focus on topics regarding the intact organism and its interaction with the environment, and so are organismal, population, community, and ecosystem in nature.
 3. The B elective courses focus on processes acting within the organism, and thus detail molecular, cellular, and organ-system mechanisms.
 4. A-Electives (*organismal, population, community, and ecosystem*)
 - a. [BIOL 33500 - Animal Behavior](#) Cr. 3.
 - b. [BIOL 34500 - Vertebrate Biology](#) Cr. 4. includes laboratory
 - c. [BIOL 43400 - Marine Community Ecology](#) Cr. 3. includes laboratory
 - d. [BIOL 44500 - Aquatic Biology](#) Cr. 3. includes laboratory
 - e. [BIOL 50100 - Field Botany](#) Cr. 4. includes laboratory
 - f. [BIOL 50200 - Conservation Biology](#) Cr. 3.
 - g. [BIOL 50500 - Biology of Invertebrate Animals](#) Cr. 3. includes laboratory
 - h. [BIOL 52000 - Contemporary Parasitology](#) Cr. 3.
 - i. [BIOL 54110 - Invasion Biology](#) Cr. 3.
 - j. [BIOL 54300 - Population Ecology](#) Cr. 4. includes laboratory
 - k. [BIOL 55600 - Physiology I](#) Cr. 3.
 - l. [BIOL 57810 - Biology Of Disease Vectors](#) Cr. 3.

- m. [BIOL 58000 - Evolution](#) Cr. 3.
 - n. [BIOL 58200 - Ecotoxicology](#) Cr. 3.
 - o. [BIOL 58600 - Topics in Behavior and Ecology](#) Cr. 3.
 - p. [ENTM 20600 - General Applied Entomology](#) Cr. 2. separate laboratory available (ENTM 20700)
 - q. [ENTM 20700 - General Applied Entomology Laboratory](#) Cr. 1.
 - r. [FNR 50500 - Molecular Ecology and Evolution](#) Cr. 3.
 - s. [FNR 22500 - Dendrology](#) Cr. 3. includes laboratory
 - t. [FNR 52300 - Aquaculture](#) Cr. 3.
5. B-Electives (*molecular, cellular, and organ-system*)
- a. [BIOL 21500 - Basic Human Anatomy](#) Cr. 4. includes laboratory
 - b. [BIOL 31500 - Developmental Anatomy](#) Cr. 4. includes laboratory
 - c. [BIOL 35000 - Plant Physiology](#) Cr. 4. includes laboratory
 - d. [BIOL 38100 - Cell Biology](#) Cr. 3.
 - e. [BIOL 43700 - General Microbiology](#) Cr. 4. includes laboratory
 - f. [BIOL 50600 - Human Molecular Genetics](#) Cr. 3.
 - g. [BIOL 50900 - Molecular Biology and Applications](#) Cr. 3. separate laboratory available (BIOL 58400)
 - h. [BIOL 51600 - Molecular Biology of Cancer](#) Cr. 3.
 - i. [BIOL 51810 - Biomedicine](#) Cr. 3.
 - j. [BIOL 52410 - Bacterial Diversity and Systematics](#) Cr. 3.
 - k. [BIOL 53300 - Medical Microbiology](#) Cr. 3.
 - l. [BIOL 53700 - Immunobiology](#) Cr. 3.
 - m. [BIOL 54400 - Principles of Virology](#) Cr. 3.
 - n. [BIOL 55110 - Proteins: Structure and Functions](#) Cr. 3.
 - o. [BIOL 55900 - Endocrinology](#) Cr. 3.
 - p. [BIOL 56500 - Immunobiology Lab](#) Cr. 1.
 - q. [BIOL 56600 - Developmental Biology](#) Cr. 3. separate laboratory available (BIOL 56700)
 - r. [BIOL 56700 - Laboratory in Developmental Biology](#) Cr. 1.
 - s. [BIOL 57710 - Emerging Infectious Diseases](#) Cr. 3.
 - t. [BIOL 58400 - Molecular Biology and Applications Laboratory](#) Cr. 1.

NOTE: If a student so desires, Biology has three Concentration Areas that they can focus their studies. Ecology and Evolutionary Biology, Genetics, Cellular and Molecular Biology, and Microbiology and Immunology. By choosing the appropriate Biology Elective courses (upper level courses listed) the student can emphasize any of these concentration areas within the same time-frame as the BS Biology degree. See the concentration courses in the Baccalaureate section of the catalog.

- e. Cumulative GPA requirement for graduation and Major GPA requirement for graduation
 - i. A GPA of 2.00 or higher for all courses taken
 - ii. A GPA of 2.30 or higher in biology core and biology elective/concentration courses
- f. Student Responsibilities: You are responsible for satisfying the graduation requirements specified for your selected program. Thus, it is essential that you develop a thorough understanding of the required courses, academic policies, and procedures governing your

academic career. All requests for exceptions to specific requirements must be made in writing and may be granted only by written approval from the appropriate chair or dean.

g. Time Limit

- i. All Biology courses applied toward graduation must be completed within ten (10) years from the time the first Biology course was completed.

h. Honors in Biology

- i. You may earn an Honors Degree in Biology by achieving an overall GPA of 3.00 or higher and a Biology GPA of 3.50 or higher while completing at least 6 research credits. Research credits should be composed of BIOL 59500, although BIOL 29500 credits will be accepted if it can be demonstrated that the BIOL 29500 research was conducted on the same topic as the BIOL 59500 research. A senior thesis committee of three faculty members must be established at least one semester before graduation. Students must prepare a plan of research, senior thesis, and give a public oral presentation of the thesis research for review by the thesis committee. Students earning the Departmental Honors Degree in Biology are not eligible for the Biology Research Certificate.

i. Total credits for degree: 120