

Associate of Science in Life Science

TOCC's Science and Health programs include an Associate of Science in Life Science degree for transfer with the following concentrations: Agriculture, Health Science, and Natural Resources. All options in the AS Life Science degree emphasize thorough preparation of students who plan to transfer to four-year colleges and universities after they graduate from TOCC. The AS Life Science degree can help a student attain admission to one of Arizona's public universities as a junior and prepares students for transfer to fields such as allied health, public health, medicine, veterinary studies, agriculture, natural resources, and science education.

Program learning outcomes

1. Demonstrate knowledge of scientific concepts and vocabulary.
2. Design and conduct a research project.
3. Display a sense of place, by being able to identify health and environmental issues on the Tohono O'odham Nation and propose a culturally-appropriate solution.
4. Apply critical and creative thinking skills to solve problems.

Health Sciences: This area is designed for transfer to four-year programs in health-related fields such as allied health, medicine, or veterinary science. Allied health careers include all non-nurse and non-physician health care fields and some examples include audiologists, speech language pathologists, physical therapists, occupational therapists, diagnostic medical personnel (medical laboratory scientists, nutritionists, and dietitians).

Natural Resources: This area is designed for transfer to four-year programs in natural resources. Natural resources professionals are involved in the protection and management of environmental resources from a local to global level. Some examples of careers in this area include extension agent, forester, GIS Expert, land use planner, natural resource scientist, environmental educator, wildlife habitat specialist, range manager, and conservation biologist.

Environmental Sciences: This area is designed for transfer to four-year programs in environmental science and, in particular, the area of environmental science that involved in identifying, controlling, or eliminating sources of pollutants or hazards affecting the environment or public health. Some professions include soil conservationist, hydrologist, water quality specialist, environmental toxicologist, and air pollution analyst.

Agriculture Sciences: This area is designed for transfer to four-year programs in the agricultural sciences which includes the study of the technologies of soil cultivation, crop cultivation and harvesting, animal production, and the processing of plant and animal products for human consumption and use. Careers include agronomist, animal scientist, crop production manager, agricultural education, agricultural extension agent, and horticulturist.

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Program of Study

General Education	General Education Category	Course Requirement	Credits Required	Recommended courses for this degree*
	Tohono O'odham Himdag	HIS 122 Tohono O'odham History and Culture (C)	3	
		THO 101 Elementary Tohono O'odham or THO 106 Conversational Tohono O'odham I	4	
	English Composition	WRT 101 Writing I	3	
		WRT 102 Writing II (I)	3	
	Mathematics	MAT 220 Calculus I or higher	5	
	Humanities and Fine Arts	Choose any course from: Art General Education Selection or Humanities General Education Selection	3	
	Social and Behavioral Sciences	Choose any course from: Social and Behavioral Science General Education Selection	3	
	Two Lab-loaded Science Course	BIO 105N Environmental Biology BIO 181N Unity of Life I BIO 182N Unity of Life II	12	
Total General Education Credits			36	

* Recommended courses are courses that are recommended to take as part of the degree because the course is relevant to area of study and/or the course will be a requirement by most Universities when the student transfers. Consult with your Academic/Faculty Adviser for further information.

Core Requirements	Core Courses	
	BIO 232 Principles of Research in the Natural Sciences (Offered F)	3
	BIO 298 Service-Learning Practicum (Offered S)	1
	BIO 299 Research Practicum (Offered S)	1
Total Core Credits		5
Electives	Total Credits for Elective	19-21
	Total Credits for Degree	60-62

Course Offered:
F =Fall semester
S = Spring semester
Su = Summer session

**Recommended Life Science Elective courses* based on student interest in Life Sciences
(See Faculty Advisor for more information)**

Agricultural Sciences

- ANR 111N Agroecology and Tohono O'odham Crop Production (4 credits)
- ANR 130N Plant Science (4 credits)
- ANR 286N Water Resources (4 credits)
- ANR 221N Soil Science (4 credits)
- BIO 208N Tohono O'odham Ethnobotany (4 credits)

Environmental Science

- CHM 151N General Chemistry I (5 credits)
- CHM 152N General Chemistry II (5 credits)
- PHY 121N Fundamentals of Physics I (5 credits)
- ANR 221N Soil Science (4 credits)

Natural Resources

- CHM 151N General Chemistry I (5 credits)
- CHM 152N General Chemistry II (5 credits)

**CHOOSE TWO COURSES FROM THE FOLLOWING LIST
(7-8 credits):**

- ANR 221N Soil Science (4 credits)
- ANR 286N Water Resources (4 credits)
- ANR 290N Wildlife Conservation (4 credits)
- ANR 128N Plant Ecology and the Sonoran Desert (4 credits)
- GEO 267 Introduction to Geographic Info Systems (3 credits)
- BIO 254N Global Change Biology (4 credits)

Health Science

- CHM 151N General Chemistry I (5 credits)
- CHM 152N General Chemistry II (5 credits)
- PHY 121N Fundamentals of Physics I (5 credits)
- BIO 160N Intro to Human Anatomy & Physiology **or** BIO 127N Human Nutrition & Biology (4 credits)