

EXPECTED LEARNING OUTCOMES

The undergraduate Biology programs at the University of Utah provide students the knowledge base, skills, and resources needed to prepare them for careers in the Biological Sciences, or for enrollment and success in post-graduate education opportunities in numerous graduate or professional schools such as, biology, medicine, dental, veterinary, pharmacy, nursing, physical therapy, occupational therapy, and physician assistant programs. Within the department of biology, the vertebrate embryology course is specifically designed to serve the needs of students in biology, and from many other departments on campus, as they prepare for futures in medical, dental, allied health careers. In fact, it is designed for the educated person who is interested in becoming more knowledgeable about their most important possession — their own body.



Learning Outcomes

- **Developmental Processes**

Students will be able to explain how developmental processes, stages, and patterns account for the structure-function relationships of the human (mammalian) body.

- **Evolutionary Relationships**

Students will be able to think critically about how the shared embryonic vertebrate body plan can be molded by selection into a variety of vertebrate forms.

- **Structure and Function**

Students will be able to describe how plasticity and malformations in adult anatomy arise as a consequence of developmental variations or problems, as well as explain why adult anatomy has the relationships and structure we observe.

- **Transmission, Flow, and Interpretation of Anatomical Information**

Students will be able to utilize the language of embryology to explain the important structural relationships and functional significance of the development in biological and medical contexts.

- **Body Systems**

Students will be able to explain the origins of the hierarchical organization of the human form, from cells, to tissues, to organs, to body systems account for the structural features at all levels of organization in the human body.

- **Ability to Apply Scientific Reasoning**

Students will be able to apply critical thinking skills using the problem solving skills of science to diagnose and solve developmental problems related to the structure and function of the human body.

- **Real World Application**

Students will not only be prepared to enter the medical and allied healthcare world with the critical knowledge base of one of the most important tools they can have in their toolbox — developmental anatomy, but they will be prepared to better understand anomalies that arise during development and impact health.