

# GENE 505: Embryology, Developmental Biology, and Human Malformations

The objective of this course is to familiarize students with modern developmental biology and to use this knowledge to understand common human malformations. The course will begin with lectures on the methodology and model systems of developmental biology, a review of preimplantation development and gastrulation, and embryogenesis/organogenesis. Subsequent lectures will focus on the development of several organ systems (e.g. central nervous system, cardiovascular, limb, urogenital, gut/respiratory, and craniofacial). These systems will be covered in two lectures each. A closing lecture on developmental pleiotropy will round out the course.

## Learning Objectives

- Connect conceptually the apparently distinct disciplines of embryology, developmental biology, and clinical medicine to appreciate mechanisms of normal and abnormal development
- Appreciate the role of evolution for understanding the mechanistic basis of malformations and as a basis for the study of these disorders in animal models
- Develop skills of integrating data from clinical, anatomic and molecular studies to form a comprehensive description of malformations

**Credits:** 1

**Class Type:** Graduate Course

**Prerequisites:**

permission of the course instructor.

**Program:** Biology, Genetics, and Medicine

**Availability** Fall 2021

**Session** Both Sessions