Overview

Heredity and Genetics is an introductory course for graduate students seeking initial licensure or endorsement and/or students earning their MA degree in secondary or middle grade science education. This course addresses the basic principles of heredity and the function of molecular genetics. Topics include Mendelian and non-Mendelian inheritance and population genetics. This course has no prerequisites.

Competencies

- **Patterns of Heredity**
  The graduate researches the biological basis of inheritance to analyze patterns of heredity.

- **Molecular Genetics**
  The graduate researches applications of molecular genetics to analyze chromosomal disorders and mutations.

- **Gene Expression**
  The graduate examines the structure and expression of genes to explain resulting phenotypes.

- **Population Genetics**
  The graduate applies the principles of population genetics to determine characteristics of a population.

Learning

**Getting Started**

Welcome to Heredity and Genetics! This course uses the Cengage MindTap platform, which includes an e-text and a variety of activities such as knowledge checks, videos, and tutorials. You will have the opportunity to explore the principles of heredity and genetics through hands-on lab experiments. Course instructors are also available to answer questions and discuss concepts covered in the course. Competency will be demonstrated by successfully completing both a performance assessment and an objective assessment.

If you have not done so within a previous course for this program, you will need to order your LabPaq from Hands-On Labs. This LabPaq is a physical shipment and contains equipment and supplies needed to complete science experiments at home. The experiments in each course reinforce the science content and teach laboratory techniques. The cost of the LabPaq is covered by your program lab fee.

Order the LabPaq specific to your program as the contents of each are different. If you have ordered and received your LabPaq for a previous course within this program, then there is no need to order another. Delivery of your
LabPaq takes about 5–7 business days, so please order your LabPaq 1–2 weeks before starting your course to ensure you will have the supplies you need to complete the experiments.

If you are enrolled in a secondary biology program, follow these instructions to order the Biological Science LabPaq. The contents of this LabPaq are used in four courses within your program: Molecular and Cellular Biology; Heredity and Genetics; Zoology; and Ecology and Environmental Science.

If you are enrolled in a middle school science program, follow these instructions to order the Middle School Science LabPaq. The contents of this LabPaq are used in three courses within your program: General Physics; Heredity and Genetics; and Ecology and Environmental Science.

The packing list that comes with your kit WILL NOT allow you to do a full inventory because it won't list all the contents of the individual modules in your kit. Please use the packing list to do a complete inventory of your kit when it arrives. Inventory your kit WITHIN 30 DAYS of receiving it, and contact HOL Customer Service at 866-206-0773, option 3, if you are missing any items. If you don't feel like HOL is providing you with responsive customer service, please let your Program Mentor and/or Course Instructor know immediately.

First-time Cengage users: Please watch the Cengage MindTap Navigation Video for instructions on setting up your Cengage account. This is required, but only needs to be done once.