



COURSE OUTLINE: BIO131 - INTRO.HUMAN GENETICS

Prepared: Leslie Dafoe

Approved: Bob Chapman, Dean, Health

Course Code: Title	BIO131: INTRODUCTORY HUMAN GENETICS	
Program Number: Name	3401: HONOURS BSCN	
Department:	BSCN - NURSING	
Academic Year:	2024-2025	
Course Description:	This course is designed to introduce students to the fundamental concepts of genetics and to the application of those concepts to an understanding of human genetics. The role of both genes and the environment in the determination of human traits and diseases will be discussed. Emphasis will be placed on the development of analytical thinking and problem solving skills and will be facilitated by the discussion of human case studies.	
Total Credits:	3	
Hours/Week:	3	
Total Hours:	42	
Prerequisites:	There are no pre-requisites for this course.	
Corequisites:	There are no co-requisites for this course.	
Essential Employability Skills (EES) addressed in this course:	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p>	
General Education Themes:	Science and Technology	
Course Evaluation:	<p>Passing Grade: 50%,</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>	
Course Outcomes and Learning Objectives:	Course Outcome 1	Learning Objectives for Course Outcome 1
	1. Students will be familiar with the structure and	Be able to describe the structure of DNA, and how this structure provides an explanation for the reliable reproduction,



function of DNA.	function and transmission of genetic information between cell and organism generations.
Course Outcome 2	Learning Objectives for Course Outcome 2
2. Students will understand how genetic information is passed from parents to offspring.	Be able to follow the fate of a particular allele through meiosis. Show the significance of Mendel's two laws.
Course Outcome 3	Learning Objectives for Course Outcome 3
3. Students will understand how to construct and interpret human pedigree data.	Construct a human pedigree chart, detailing inheritance patterns of human traits using the correct conventions for symbols and organization, for one or more traits. Be able to predict the risk of acquiring a particular trait/allele for future members of the family.
Course Outcome 4	Learning Objectives for Course Outcome 4
4. Students will understand the various ways in which genes behave, and how they interact with one another and the environment to influence/determine human traits in both health and disease.	Be able to determine whether a trait is inherited through a dominant/recessive, co-dominant, or sex-linked inheritance pattern. Describe the outcomes of various forms of polyploidy/euploidy. Describe various multi-factorial traits and be able to estimate the relative contributions/modifications made by both genes and the environment to these traits. Analyze data from pedigree and/or case study sources in order to ascertain, when possible, the inheritance patterns of human traits.
Course Outcome 5	Learning Objectives for Course Outcome 5
5. Students will know the various ways in which genetic testing is done and used to further knowledge of and treatment for genetic disease states in humans. Students will also understand the ethical considerations of these new technologies.	Beginning with a case study from the literature, suggest a particular testing technique to use in order to provide a family with the information required for an informed decision about treatment modalities to be used for their family member. Outline the various ethical concerns/considerations for various types of testing, and for how the results of this testing is or can be shared.
Course Outcome 6	Learning Objectives for Course Outcome 6
6. Students will comprehend the contributions that the research community and especially the human genome project is making towards expansion of knowledge about human genetics.	Using information from scholarly sources, provide a brief summary of the current knowledge about a particular genetically-influenced or genetically-determined human trait.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Final Exam	40%



	Term Test #1	30%
	Term Test #2	30%

Date: November 26, 2024

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.