1/16/2025   DATE

☐ REQUIRED COURSE
☑ ELECTIVE COURSE

MSD   DIVISION
☐ NEW COURSE
☑ REVISION

Lake Land College
Course Information Form

COURSE NUMBER:	BIO-160	TITLE: *(30 Characters Max)*		Introduction to Genetics			
SEM CR HRS:	3	Lecture:	3	Lab:	0		ECH: 3

Course Level:	☑ Gen Ed/IAI ☐ Baccalaureate/Non-IAI	☐ Career/Technical ☐ Dev Ed/Not in Degree Audit	Clinical Practicum: 0	Work-based Learning: 0	WBL ECH: 0

Course PCS & CIP:	11 - 26.0801	IAI Code:	L1 906	Contact Hours (Minutes/Week)	
Repeatable (Y/N): N	Pass/Fail (Y/N): N	Variable Credit (Y/N): N	Min: Max:	16 Wks 150	8 Wks 300

Prerequisites:	None
Corequisites:	None
Catalog Description: (40 Word Limit)	An introduction to the principles of genetics with emphasis on human heredity. Included are Mendelian genetics, hereditary disorders, gene expression, genetic engineering and population genetics.

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Cell basics and Mendelian inheritance	12			
Exceptions to Mendelian inheritance and genetics of behavior	12			
DNA structure and function and gene expression	12			
Chromosomal anomalies, allele frequencies, evolution and genetics in today's world	12			
TOTAL	48	0	0	0

EVALUATION

QUIZZES ☑	EXAMS ☑	ORAL PRES ☐	PAPERS ☑
LAB WORK ☐	PROJECTS ☐	COMP FINAL ☑	OTHER ☐

COURSE MATERIALS

TITLE:	Human Genetics Concepts and Applications	
AUTHOR:	Ricki Lewis	
PUBLISHER:	McGraw-Hill	
VOLUME/EDITION/URL:	14th	
COPYRIGHT DATE:	2023	

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:
Cell basics and Mendelian inheritance	12	1. Identify cellular components and describe their functions. 2. Outline Mendelian genetics terms and implement the use of these terms in solving a Punnett square problem.
Exceptions to Mendelian inheritance and genetics of behavior	12	1. Predict the mode(s) of inheritance for specific diseases. 2. Assess the role of environment in multifactorial inheritance.
DNA structure and function and gene expression	12	1. Identify the components of DNA structure. 2. Demonstrate its function in protein synthesis. 3. Inform how genetic mutations alter protein synthesis.
Chromosomal anomalies, allele frequencies, evolution and genetics in today's world	12	1. Calculate HW equilibrium and measure allele frequencies in populations. 2. Appraise the impact that metabolic and behavioral genetics has on society. 3. Outline and describe many genetic technologies involved in medicine.
	48	

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome 1	Identify and explain fundamental principles of genetics and meiosis. Predict the probabilities of occurrence for various traits.
Course Outcome 2	Inform people of many genetic diseases along with their causes and modes of inheritance.
Course Outcome 3	Compare the difference and complexity of population/human genetics vs. Mendelian genetics.
Course Outcome 4	Outline the technologies/ applications that involve DNA and examine their impact on society.
Primary Laker Learning Competency	Scientific Literacy: Students apply the scientific process to real-life situations.

Secondary Laker Learning Competency	Information & Technology Literacy: Students evaluate information effectively using the appropriate technological tools.

Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency. Limit to 3-5.