GRANDE PRAIRIE REGIONAL COLLEGE

SCIENCE DEPARTMENT

1986-87

COURSE: Biology 297 - Heredity

INSTRUCTOR: T.R. Shewchuk
Office: D306 539-2986
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NATURE OF COURSE:

This course will explore the cellular and molecular basis of the transmission of hereditary characteristics. Major emphasis will be placed on Mendelian inheritance and its cytological basis. Sex determination, linkage and crossing over, DNA as genetic material, gene action and the genetic code will be discussed. The course consists of 3 hours of lecture and 3 hours of laboratory per week.

REQUIREMENTS:

A. Weekly problem sets.
B. One mid-term examination.
C. One final laboratory examination.
D. One final lecture examination.

EVALUATION:

A.	Problem sets	25%
B.	Mid-Term	20%
C.	Final Lab Exam	15%
D.	Final Lecture Exam	40%

RESOURCES:

Hexter, W., and H.T. Yost, Jr. The Science of Genetics. Prentice-Hall.
Levine, R.P. Genetics. Holt, Rinehart, and Winston.
Pai, A.C., and H. Marcus-Roberts. Genetics: Its Concepts and Implications. Prentice-Hall.
Rogers, M. Biohazard.
Watson, J.D. The Double Helix.
→ Biology 297. Heredity. Laboratory Manual. University of Alberta.
→ Stansfield, W.D. Schaum's Outline Series of Theory and Problems of Genetics. McGraw Hill.
Tamarin, R.H. Principles of Genetics. PWS Publishers. (GN 375)

BIOLOGY 297

COURSE SYLLABUS

Genotype, Phenotype and Environment
The Cell
Mitosis
Meiosis
Chromosome Cycles
Monohybrid Inheritance
Lethal Genes
Probability
Dihybrid and Trihybrid Inheritance
Modified Dihybrid and Gene Interaction
Multiple Alleles
Polygenic (Quantitative) Characters
Sex Determination and Differentiation
Sex Characters
Holandric Inheritance
Sex-linked Characters
Linkage and Crossing Over
Chromosome Mapping
Gene Mutation
Gene Structure
Chemical Structure of Genes
Gene Action
Genetic Code