EFFECTIVE: SEPTEMBER 2007
CURRICULUM GUIDELINES

A.	Division:	**Education**	Effective Date:	**September 2007**		
B.	Department / Program Area:	**Faculty of Science & Technology Biology**	Revision If Revision, Section(s) Revised:		New Course	X

Descriptive Title Semester Credits

F: Calendar Description:

This course is the study of the principles of genetics. Topics covered include the physical and chemical basis of heredity, genetic analysis in eukaryotes, prokaryotes and viruses, mutation; population genetics and evolution

G: Allocation of Contact Hours to Type of Instruction / Learning Settings

Primary Methods of Instructional Delivery and/or Learning Settings:

Lecture/Tutorial (problem solving)/Laboratory

Number of Contact Hours:

Lecture/tutorial 4 hours/week
Laboratory /practical 3 hours/week

Number of Weeks per Semester:

15

H: Course Prerequisites:

BIOL 1210 or BIOL 1310
or permission of instructor

I: Course Corequisites:

none

J: Course for which this Course is a Prerequisite

none

K: Maximum Class Size:

27

L: PLEASE INDICATE**:**

	Non-Credit
	College Credit Non-Transfer
X	College Credit Transfer:

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bctransferguide.ca)

M: Course Objectives / Learning Outcomes

Upon completion of this course, students will be able to demonstrate an understanding of the principles of classical and modern genetics, including being able to:

1. Describe the physical basis of heredity.

2. Describe the experimental basis of Mendelian inheritance.

3. Describe sex-determining mechanisms in a wide variety of organisms.

4. Describe non-Mendelian inheritance, including linkage, sex-linkage, sex-influenced inheritance, sex-limited inheritance, multiple allelism, multigenic inheritance, and extra-chromosomal inheritance.

5. Interpret pedigrees to determine modes of inheritance of genetic anomalies in humans.

6. Derive chromosome maps by a variety of techniques, including the analysis of:
   6.1. testcross data in higher organisms
   6.2. tetrad analysis in fungi

4. Non-Mendelian Inheritance, including:
   4.1. linkage

17. Population genetics and evolution, including:
    17.1. Hardy-Weinberg equilibrium
    17.2. effects of genetic drift and selection

18. Laboratory Exercises
    18.1. mitosis in onion roots
    18.2. chi square (corn crosses)
    18.3. gene mapping in *Drosophila*
    18.4. polytene chromosomes
    18.5. plant viruses
    18.6. population genetics (models of drift and selection; field study)

DOUGLAS COLLEGE SIGNATURE ELEMENTS:

Core Competencies:

a. Oral, written and interpersonal communication:

Laboratory assignments, in-class assignments, problem sets and all examinations in this course will

O: Methods of Instruction

This course involves four hours per week of classroom instruction and three hours per week of laboratory activity. Classroom work will include lectures and tutorial