STANDARDIZED COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER: Science – Bio G260
COURSE TITLE: Genetics
COURSE CATALOG DESCRIPTION: Introduction to basic laws and theories of biological inheritance and variation

LECTURE HOURS PER WEEK: Three (3) CREDIT HOURS: Three (3)

PREREQUISITE(S): BIO G101, and CHEM G111; or completion of BIO G212.

SECTION II

A. SCOPE: Genetics is the study of heredity and involves investigations of molecules, cells, organisms, and Populations. Many topics in the field of genetics are very complex, and cannot be covered in great depth in a one-semester course. The course is intended for students with a strong background in biology. Major themes that are covered include: Mendelian genetics, molecular & cellular aspects of inheritance, recombination, mutation, genetic engineering, and population genetics

B. REQUIRED WORK: Grades will be based on four hourly exams. Each exam will contain 50 to 75 questions. The first exam represents 15% of the total grade. The lower value is NOT a reflection of the importance of the material. The material represents the foundation for the rest of the course. The value is lower to allow the student to "get acquainted" with the style of the author of the exam; Exam II = 25%, Exam III = 30% and Exam IV = 30% There is NO extra credit work.

C. PARTICIPATION: Participation in Chat sessions is optional.

D. METHODS OF INSTRUCTION: Read assigned portions of the text. Work with the Flash Animations and tutorials on line at WebCT

E. OBJECTIVES, OUTCOMES, and ASSESSMENT: Students' grades will be based on achievement of learning the objectives and outcomes listed below:

LEARNING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
To demonstrate an understanding of:	**Student will:**	**As measured by:**
Historical perspective of the science of genetics. Mendelian Genetics	***For all learning outcomes:*** Read assigned portions of the text. Work with the Flash Animations and tutorials on line at WebCT. Take quizzes and self test online. Participate in chat sessions when available Ask for explanations and clarifications of material via email. If local – attend office hour	Four one hour proctored exams (those unable to take exams at CCC may make arrangements to take them at a nearby college or university) Some exams will contain traditional genetics problems in addition to multiple choice, true/false, and matching questions.
Sex determination and Sex chromosomes		

Chromosome mutations		
Mapping in Bacteria and Bacteriophage		
DNA Structure, Analysis, Replication and Synthesis		
Genetic code Transcription Translation		
Gene mutation DNA repair Transposable elements		
Regulation of Gene expression Recombinant DNA technology DNA sequence organization		
Genomics and Proteomics Biotechnology and Society		
Genetic basis of cancer		
Population genetics		

F. TEXT(S) AND MATERIALS: Essentials of Genetics 4/e by Klug and Cummings from Prentice-Hall

G. INFORMATION TECHNOLOGY: The following represents the minimum hardware and software needed for the course:

WINDOWS OPERATING SYSTEM
(may be required to run course-specific software)
Computer Hardware
- Pentium III 600 MHZ processor, 10 GB Hard drive, 256 MB RAM
- CD-ROM drive
- Sound card and speakers or headphones
- DSL or cable modem
- Printer

Computer Software (*free download available)
- Operating System: Windows 2000 or newer
- Microsoft Office (2000 or newer)
- *Internet Explorer 6.0
- *Adobe Reader 6.0
- *RealOne Player

MACINTOSH OPERATING SYSTEM
(Certain CIS courses may require Windows OS and Windows-only software)
Computer Hardware
- G3 processor at 350Mhz, 10 GB Hard drive, 256 MB RAM
- CD-ROM drive
- Sound card and speakers or headphones
- DSL or cable modem
- Printer

Computer Software (*free download available)
- Operating System: Macintosh OS 10.2.x or newer
- Microsoft Office X (updated to version 10.1.5)
- *Internet Explorer 5.2.2
- *Adobe Reader 6.0
- *RealOne Player