Course Syllabus

Department: Science & Technology

Date: 2/1/12

I. Course Prefix and Number: BIO 119
   
   Course Name: Contemporary Biology II

   Credit Hours and Contact Hours: 4 credit hours – 5 contact hours

   Catalog Description including pre- and co-requisites:

   Part II of an introductory laboratory biology course with for non-science majors. Topics covered in part II include: Evolution, biodiversity, plant and animal anatomy and physiology, ecology, and environmental science. The emphasis is on application of basic biological principles to contemporary issues and problems. Students will achieve basic scientific literacy with a goal of improved critical thinking, writing, and problem-solving skills. Three hours of lecture and two hours of laboratory weekly. Pre-requisite: BIO 118 Contemporary Biology I.

II. Course Outcomes and Objectives

   Student Learning Outcomes:

   Students will demonstrate an understanding of the basic principles of biology in relation to contemporary issues.

   Students will apply the methods and process of science, and be able to critically evaluate scientific articles in the popular press.

   Students will demonstrate the ability to make informed scientific decisions as necessary in their personal life as well as their role as educated citizens.

   Students will be able to find and access additional information to inform these decisions.

   Students will show a basic understanding of evolution, biodiversity, plant and animal anatomy and physiology, ecology, and environmental science

   Students will be able to apply these basic concepts (evolution, biodiversity, plant and animal anatomy and physiology, ecology, and environmental science) to solve problems as a team.

   Relationship to Academic Programs and Curriculum:

   This course is designed for non-science majors needing one or two semesters of a laboratory based science.
College Learning Outcomes Addressed by the Course:

- writing
- oral communications
- reading
- mathematics
- problem-solving
- computer literacy
- ethics/values
- citizenship
- global concerns
- information resources
- professional competency

III. Instructional Materials and Methods

Types of Course Materials:

Textbook in general biology, laboratory manual developed and updated by FLCC faculty.

Methods of Instruction (e.g. Lecture, Lab, Seminar …):

Lecture, laboratories, team problem solving of case studies.

IV. Assessment Measures (Summarize how the college and student learning outcomes will be assessed):

Team work in both the lecture and laboratory setting will develop relational, communication, and problem-solving skills. Students will be assessed on their knowledge of lecture material and comprehension of reading through exams. Students will apply mathematics (specifically graphing) to solve biological problems in laboratories and case studies or readings. Students will be assessed on writing, computer literacy skills, and the ability to manage information resources through laboratory reports. Students will explore ethical issues related to contemporary biology through case studies and/or assignments based on current news.

V. General Outline of Topics Covered:

Theme 1: Evolution

a. Who thought of that? – The theories and the evidence

b. The force of change – microevolution

c. The product of change - speciation

d. The human story: Evidence from our past

Theme 2: Life's Diversity

a. Who's who? – Organizing Life's Diversity
b. It’s a Small World – Microbes

c. A Green Earth – Plant Diversity

d. Life’s Zoo – Animal Diversity

e. Preserving Diversity – Conservation and Sustainability

Characteristics of Life

Theme 3: Plant Anatomy and Physiology

a. Building a Plant: Form and Function

b. Plants on a Diet: Nutrition and growth

c. A Plant World: Reproduction and Dispersal

Theme 4: Animal Anatomy and Physiology

a. A Life in Balance: Homeostasis

b. Animal Communication: Nervous and Endocrine System

c. Finding Oxygen: Blood, Cardiovascular and Respiratory

d. Animals in Motion: Skeletal and Muscular System

e. Animal Defenses: The immune System

f. Finding Food: Nutrition and Digestion

g. Becoming Human: Human Reproduction and Development

Theme 5: Ecology and Environment

a. The Behavior of Animals

b. Living Together: Populations and Community Interactions

c. Life is Connected: Environment and Ecosystem Interactions