

COURSE SYLLABUS

Course Title:	General Biology II (lecture/lab)		Date submitted:	May 2019 (AAC:19-25)
Department:	Mathematics and Science			
Curriculum:	Biology			
Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.	Course Code: (eg. ACC 101)	BIO*122	Prerequisites:	
	Course Type:	X	C- or better in Composition (ENG*101)	
	A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: M: Seminar Internship P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio			
	Elective Type:	G/LA/S		
	E: English FA: Fine Arts HI: History HU: Humanities LA: Liberal Arts FL: Foreign Language M: Math S: Science SS: Social Science G: General			
	Credit Hours:	4	Corequisites:	
	Developmental: (yes/no)	NO	None	
	Contact Hours:	Lecture: 3 Clinical: 0 Lab: 3 Studio: 0 Other: 0 TOTAL: 6		
	Class Maximum:	36	Other Requirements:	
	Semesters Offered:	Sp	Computer Literacy Safety Glasses Dissection Kit	
Catalog Course Description:	A comparative study of systems, covering specific organisms in the five major Kingdoms: Monera, Fungi, Protists, Plants, and Animals. Emphasis on taxonomy, diversity of life, and the evolution of systems as manifested by the influences of genetics and the environment. Dissection is required.			
Topical Outline: List course content in outline format.	<ol style="list-style-type: none"> 1. How Populations Evolve <ol style="list-style-type: none"> A. Darwin and the Theory of Evolution B. Supportive Evidence for Evolution 2. Population Genetics <ol style="list-style-type: none"> A. Hardy-Weinberg Equilibrium B. Genetic Drift C. Population Variation D. Natural Selection E. Sexual Selection 3. Origin of Species <ol style="list-style-type: none"> A. Species Definition 			

- B. Reproductive Barriers
- C. Geographic Isolation
- D. Adaptive Radiation
- 4. Evolutionary History
 - A. Fossil Record and Methods of Dating
 - B. Continental Drift
 - C. Mass Extinctions
 - D. Phylogeny
 - E. Classification Methods
- 5. Evolution of Life
 - A. Origin of First Polymers
 - B. Formation of First Cells
 - C. Prokaryotic Cell Evolution
 - D. Eukaryotic Cell Evolution
 - E. Protozoans
- 6. Plant and Fungal Evolution
 - A. Characteristics of Plants
 - 1. Nonvascular Plants
 - 2. Seedless Vascular Plants
 - 3. Gymnosperms
 - 4. Angiosperms
 - B. Characteristics of Fungi
 - 1. Nutrition and Body Structure
 - 2. Reproduction
- 7. Evolution of Animals
 - A. Distinguishing Characteristics of Acoelomates, Pseudocoelomates, and Coelomates
 - B. Germ Layers of Embryonic Development
 - C. Body Plans of Animals
 - D. Invertebrates
 - 1. Sponges
 - 2. Cnidarians
 - 3. Flatworms
 - 4. Nematodes
 - 5. Mollusks
 - 6. Annelids
 - 7. Arthropods
 - 8. Echinoderms
 - E. Vertebrates
 - 1. Fish
 - 2. Amphibians
 - 3. Reptiles
 - 4. Birds
 - 5. Mammals
- 8. Human Evolution
 - A. Primate Diversity
 - B. Hominid Development

- C. Human Culture
- 9. Animal Structure
 - A. Tissues
 - B. Organs
 - C. Systems
- 10. Digestion and Nutrition
 - A. Ingestion of Food
 - B. Food Processing
 - C. Digestion Organs and Accessory Glands
 - D. Essential Nutrients
 - E. Vitamins and Minerals
- 11. Respiration
 - A. Variation in Gas Exchange
 - B. Respiratory Organs
- 12. Circulation
 - A. Types of Internal Transport
 - B. Cardiovascular System of Vertebrates
 - C. Organs of Mammalian Cardiovascular System
 - D. Structure and Function of Blood
- 13. Nervous Systems
 - A. Variation in Structure and Function
 - B. Neuron and Chemical Synapse
 - C. Vertebrate Brain Development
 - D. Human Brain Structure
- 14. Animal Locomotion
 - A. Variation in Animal Skeletons
 - B. Human Skeleton
 - C. Muscular System
 - 1. Structure of a Skeletal Muscle Cell
 - 2. Muscle Contraction
- Laboratory:
 - 1. Prokaryotic Cells
 - 2. Protozoans
 - 3. Fungi
 - 4. Plants
 - 5. Segmented Worm Dissection
 - 6. Mollusk Dissection
 - 7. Crayfish Dissection
 - 8. Fetal Pig Dissection

Outcomes:
Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.

Upon successful completion of this course, the student will be able to do the following:
COURSE:

- 1. explain the scientific evidence that supports the theory of evolution
- 2. solve and apply the Hardy-Weinberg Equilibrium
- 3. define the following terms: genetic drift, population variation, natural selection and sexual selection
- 4. define the term species and apply how they develop based upon reproductive barriers, geographic

	<p>isolation, and adaptive radiation</p> <ol style="list-style-type: none"> 5. describe the criteria used to assign species to the kingdoms 6. identify how the first cells developed 7. describe how protozoans arose from early cells 8. trace the evolutionary advances of plants onto land 9. describe characteristics of fungi 10. explain the basic body plans and embryonic development of animals 11. identify the differences between invertebrates and vertebrates 12. compare and contrast differences among invertebrates and vertebrates in the structure and function of the following systems: digestive, circulatory, respiratory, nervous, muscle, and skeletal <p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i> N/A</p> <p>COMPETENCY FULFILLED: Scientific Knowledge & Understanding (SCKX) OR Scientific Reasoning (SCRX)</p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<p>Assessment will be based on the following criteria:</p> <ul style="list-style-type: none"> class examinations class and laboratory quizzes written assignments standardized practicals
<p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p>Required:</p> <ul style="list-style-type: none"> slides specimens for dissection software <p>Desired: None</p>
<p>Textbook(s)</p>	<p><i>Biology: Concepts and Connections</i>; Campbell, Reece, Taylor and Simon; Latest edition</p>