COURSE OUTLINE: BIO 94 - ACE BIOLOGY

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Course Code: Title	BIO 94: ACE BIOLOGY
Program Number: Name	8220: ACAD CAREER ENTRANCE
Department:	ACAD. UPGRADING SPONSORSHIP
Semesters/Terms:	18F, 19W, 19S
Course Description:	This course will explore topics dealing with cellular biology, including cell energy and membrane transport, microbiology including use of microorganisms in biotechnology, basic animal and plant structure and physiology, and finally environmental science, including ecosystems, population dynamics and human impact on the environment. This curriculum is preparatory for continuation in a post-secondary college program.
Total Credits:	5
Hours/Week:	5
Total Hours:	100
Prerequisites:	ENG044
Corequisites:	There are no co-requisites for this course.
Substitutes:	ACE010
Essential Employability Skills (EES) addressed in this course:	EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.
Course Evaluation:	Passing Grade: 70%, B
Books and Required Resources:	The Pearson Custom Library for the Biological Sciences, ACE Biology: BIO 94 by Pearson Custom Library Publisher: Pearson Library Solutions ISBN: 978-1-256-60027-5

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Upon successful completion of this course, the student will demonstrate the ability to understand and utilize appropriate terminology related to cells, biochemical compounds, membrane transport and cell energy.	1.1 List the main points of cell theory 1.2 Explain the functions of organelles 1.3 Identify and describe 4 major biochemical compounds 1.4 Describe the role of enzymes in biochemical reactions 1.5 Define cell membrane transport processes 1.6 List features of each stage of mitosis 1.7 Compare respiration and photosynthesis

Course Outcome 2	Learning Objectives for Course Outcome 2
Upon successful completion of this course, the student will demonstrate the ability to understand and utilize appropriate terminology related to taxonomic differences, growth and reproduction, and symbiotic relationships of micro-organisms.	2.1 Compare representative bacteria, protists, viruses and fungi in terms of shape, motility, role and connection to human disease 2.2 Describe modes of reproduction in micro-organisms 2.3 Compare genetic material of viruses and bacteria with those of eukaryotic cells 2.4 Illustrates uses of viruses and bacteria in biotechnology and genetic engineering 2.5 Evaluate implications of viral, bacterial and fungal infections on a human host
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Upon successful completion of this course, the student will demonstrate the ability to understand and utilize appropriate terminology related to digestion, Circulation, Respiration, Homeostasis, Locomotion and Reproduction of humans and other animals.	3.1 Describe anatomy and physiology of musculo-skeletal, circulatory, nervous, endocrine and reproductive systems 3.2 Explain causes, symptoms and treatments of major disorders of the above systems 3.3 Define homeostasis and explain the role of the endocrine and central nervous systems in maintaining homeostasis 3.4 List the features of each stage of meiosis 3.5 Apply principles of genetics to solve simple patterns of inheritance
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Upon successful completion of this course, the student will demonstrate the ability to understand and utilize appropriate terminology related to plant tissues, life cycles, metabolic processes, growth and maintenance of plants.	4.1 Classify plants by identifying characteristics 4.2 Describe structure and physiology of plant tissues 4.3 Explain the steps in the life cycle of a plant 4.4 Describe the process of growth and differentiation in plants 4.5 Identify the importance of plant diversity in maintaining ecosystems 4.6 Explain the role of aquatic plants in the purification of waste or run-off water
Course Outcome 5	**Learning Objectives for Course Outcome 5**
Upon successful completion of this course, the student will demonstrate the ability to understand and utilize appropriate terminology related to distribution of life, ecosystems and communities, population dynamics and human impact on the environment.	5.1 Demonstrate an understanding of taxonomy by classifying organisms from a local ecosystem 5.2 Use energy pyramids to explain the mechanisms and interactions of a food chain 5.3 Explain the ecological role of representative organisms from each of the kingdoms of life 5.4 Describe the flow of matter through the biogeochemical cycles 5.5 Define population growth and the factors influencing it

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight	Course Outcome Assessed
Learning Activities	20%	
Tests	80%	

Date: August 30, 2018

Please refer to the course outline addendum on the Learning Management System for further information.