COURSE SYLLABUS
BIOLOGY 1: FUNDAMENTALS OF BIOLOGY 1
S.Y. 2021 – 2022

COURSE DESCRIPTION

Biology 1 focuses on the science of Biology. It investigates the origin of life, the unity and the diversity of life forms and processes and the centrality of evolution in Biology.

COURSE OBJECTIVES

By the end of the course, students are expected to:

1. understand the unifying themes in biology, especially evolution and structure-to-function relationships;
2. develop critical thinking skills in examining trends, concerns, and issues; and
3. engage in activities that enhance the integrity of the environment in order to sustain the quality of life at the local and global perspective.

COURSE TOPICS

FIRST QUARTER:	SECOND QUARTER:
I. Biology as the Study of Life A. Unifying themes in the study of Biology II. Evolution A. Evolution 1. Charles Darwin's Theory of Evolution 2. Evolutionary Evidences 3. Mutation as raw material for evolution III. The Diversity of Life A. The Microscope as a Biological Tool 1. Parts, uses, magnifying and resolving power of the microscope B. Classification of Living Things 1. Bases for grouping organisms (morphology, comparative anatomy, embryology, biochemistry, modern genetics, phylogeny) 2. Schemes of biological classification (emphasis on the three-domain/ six-kingdom scheme)	C. The Eukaryotes 1. Characteristics and evolution of eukaryotes 2. Evolution of multicellular organisms (Volvocine series) 3. Plant and animal tissues that form organ systems IV. Life Processes: Energy Utilization and Maintenance of Homeostasis A. Nutrition and Digestion 1. Trends and various strategies used by organisms to process food B. Transport/ Circulation of Materials 1. Trends and various strategies used by organisms to transport materials 2. Plant tissues and transport in plants C. Immunity 1. Trends and various strategies used by organisms for defense against disease*

	*limit discussion to human immune defense system *incorporate concept of One health (highlighting the OVID-19 pandemic)
THIRD QUARTER:	**FOURTH QUARTER:**
IV. Life Processes: Energy Utilization and Maintenance of Homeostasis (cont.) D. Respiration and Gas Exchange 1. Trends and various strategies used by organisms to utilize energy from food E. Excretion and Osmoregulation 1. Trends and various strategies used by organisms for excretion and osmoregulation* *include waste excretion system in plants and excretory products (as specified in the College Readiness Standrads)	V. Life Processes: Support, Protection, Movement and Locomotion A. Support, Protection and the Body Covering/ Integument and Locomotion by bones, joints and muscles Vi. Life Processes: Regulation, Coordination, Integration and Control A. Nervous Coordination 1. Trends and various strategies used by organisms to respond to external and internal stimuli 2. Sensory perception B. Hormonal Control and Regulation 1. Hormones that coordinate plant function 2. Trends and various strategies used by organisms in hormonal control and regulation

GRADING SYSTEM

The student performance will be evaluated according to this grading system.

Assessment	Criteria
Long Test 1	25%
Long Test 2	25%
Alternative Assessment (maximum duration: 3 hours/ quarter)	25%
Formative assessments (maximum duration: 20% of total time per week)	25% (40% compliance, 60% score)

REFERENCES

Reece, J. B., Urry, L. A., Cain, M. L. 1., Wasserman, S. A., Minorsky, P. V., Jackson, R., & Campbell, N. A. (2014). Campbell biology (Tenth edition.). Boston: Pearson.

Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., & Walter, P. (2002). Molecular biology of the cell. New York: Garland Science.

COURSE MATERIALS

1. Scientific Calculator
2. Pad paper
3. PSHS-CLC K-hub
4. Internet Connection

Prepared by:	Checked by:	Approved by:
PAUL JHON DIEZON *Subject Teacher* *08-Sep-21*	**JOSEPHINE JOY T. ANTALAN** *Head, Biology Unit* 08 Sep 2021	**ROHIT C. TILWANI** *Chief, Curriculum and Instruction Division* *Sept. 8, 2021*