

COPY

Appendix C  
College of Micronesia-FSM

COURSE OUTLINE COVER PAGE

Biology  
Course Title

SC 120 (revised)  
Department and Number

**Course Description:**

This course is an introduction to modern biological concepts at the molecular, cellular, and organismic levels, including cell biology, anatomy, physiology, genetics, plant and animal diversity, ecology, and other selected topics.

Course Prepared by: Dr. Don Buden

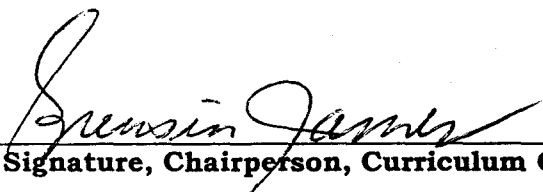
Campus National

	Hours per Week		No. of Week		Total Hours	=	Semester Credits
Lecture	<u>3</u>	x	<u>16</u>	x	<u>48/16</u>	=	<u>3</u>
Laboratory	<u>3</u>	x	<u>16</u>	x	<u>48/48</u>	=	<u>1</u>
Workshop		x		x		=	
<b>Total Semester Credits</b>						=	<u>4</u>

**Purpose of Course:**

Degree Requirement \_\_\_\_\_  
Degree Elective y \_\_\_\_\_  
Certificate \_\_\_\_\_  
Remedial \_\_\_\_\_  
Other \_\_\_\_\_

Prerequisite Course(s): ESL 089 Reading V \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
Signature, Chairperson, Curriculum Committee

9/13/01  
\_\_\_\_\_  
Date Approved by Committee

SUSAN MOSES  
Signature, President, COM-FSM

9/22/01  
Date Approved by President

COLLEGE OF MICRONESIA  
COURSE OUTLINE

**BIOLOGY SC 120**

**COURSE DESCRIPTION**

This course is an introduction to modern biological concepts at the molecular, cellular, and organism levels, including cell biology, anatomy, physiology, genetics, plant and animal diversity, ecology, and other selected topics.

**COURSE CONTENT**

- Scientific method and measurements
- Biological chemistry
- Cell structure and function
- Genetics
- Anatomy and physiology
- Embryology
- Taxonomy/Classification
- Plant, animal, and microbial diversity
- Ecology

**GENERAL OBJECTIVES**

1. To have some knowledge and understanding of structural components and chemical processes common to all living things.
2. To understand the basic principles of inheritance that provide for the continuity of life.
3. To be aware of the breadth of diversity among living things and some of the processes contributing to that diversity.
4. To be aware of the interrelationships and interdependencies between organisms and their environment via an understanding of some of the basic principles of ecology.
5. To become biologically literate to the extent that current issues in biology reported in popular literature (newspapers and magazines) can be easily read and understood.

**SPECIFIC OBJECTIVES**

Upon completion of the course, students should be able to:

1. Demonstrate knowledge of steps or procedures used in the scientific method.

2. Demonstrate a working knowledge of the most common units of measurement in the metric system.
3. Construct bar or line graphs using data from scientific experiments.
4. Demonstrate an understanding of the basic principles of chemistry as related to living systems, including an ability to explain or define terms such as atom, molecule, isotope, compound, solvent, solute, ionic bond, covalent bond, pH, acid, base, and buffer.
5. Compare and contrast the major macromolecules comprising living things, including carbohydrates, lipids (fats), proteins, and nucleic acids.
6. List and outline the functions of at least 10 cell organelles.
7. Relate cell structure and organization to the classification of living things within the 5-kingdom system of classification
8. Demonstrate a general understanding of how cells harvest energy by identifying the major compounds entering and exiting the processes of photosynthesis, glycolysis, fermentation, the Krebs cycle, and the respiratory chain.
9. List and/or recognize the major stages of mitosis (cell division), identifying the main features of each stage, and be able to compare and contrast this process with that of meiosis (reduction division).
10. Diagram the basic structure of DNA and RNA and be able to describe or otherwise indicate how the genetic code imbedded in DNA functions in protein synthesis.
11. Solve problems in Mendelian genetics involving monohybrid crosses, dihybrid crosses, sex linkage, multiple alleles (using ABO blood groups as examples), and incomplete dominance.
12. List and give examples of the major animal tissue types.
13. List and give distinguishing characteristics and examples of the 10 organ systems.
14. Distinguish between sexual and asexual reproductive systems and give examples of different strategies in each, including fission, parthenogenesis, hermaphroditism, self-fertilization and cross-fertilization.
15. Identify and give functions of the major organs of the human male and female reproductive organs.
16. Discuss the advantages and disadvantages and efficacy of several different methods of contraception.

17. List and define stages of vertebrate embryonic development and outline functions of the extra embryonic membranes in humans and in animals producing shelled eggs.
18. Demonstrate knowledge of the effects of hormones in controlling reproductive functions.
19. List in proper sequence the basic taxonomic categories in the Linnaean system of classification and nomenclature and demonstrate how to properly write a scientific name.
20. List distinguishing characteristics and examples of: bacteria, protozoa, algae, fungi, the major groups of plants (e.g., nonvascular and vascular plants, seed plants, flowering plants), and the major animal phyla.
21. Distinguish between bacteria and viruses and list beneficial and harmful examples of each.
22. Define species and explain a model for speciation.
23. Demonstrate an understanding of some of the basic terms and concepts of ecology, including community organization and trophic levels, food chains, food webs, ecological pyramids, biological magnification, and prey/predator relationships.

#### **TEXT**

Enger, E. D., and F. C. Ross. 2000. *Concepts in Biology*. 9<sup>th</sup> edition. McGraw Hill Publ., Dubuque, Iowa. 532 pages.

Each student is also required to have a new (unused) lab workbook for General Biology available through the college bookstore.

#### **ATTENDANCE POLICY**

COM-FSM attendance policy will be used.

#### **EVALUATION**

Grades will be based on examinations and quizzes.