



COURSE NUMBER: BIOL 101

CREDITS: 4

COURSE TITLE: Principles of Biology I

PREREQUISITES: Biology 104, BC Biology 12 or equivalent and BC Chemistry 11 or equivalent, or by permission

Total Hours: 91

COURSE DESCRIPTION: Biology 101 and 102 give an overview of general biological principles. They provide the necessary background for those pursuing a career in the sciences. Topics covered in Biology 101 include the scientific method, biochemical pathways, cell structure and function, DNA replication and flow of genetic information, comparative anatomical and physiological aspects in both plants and animals. The laboratory exercises generally parallel the lecture material and provide hands on experience in selected topics. Formal lab reports emphasizing scientific writing and design are emphasized in both courses, as is the process of using research sources to locate biological information.

LEARNING OUTCOMES:

By successful completion of this course, you should be able to:

- Understand fundamental concepts that characterize biology, including concepts that characterize cell, plant and animal physiology, genetics, evolution, ecology diversity, and molecular biology.
- Describe and practice laboratory safety guidelines relating working with chemicals, microorganisms, and other biological specimens.
- Assess personal needs in regard to study time and methods, and accept personal responsibility for the learning process.
- Improve confidence in scientific knowledge and ability to apply knowledge to related situations.
- Understand the relationship between science and other subject areas, including interdisciplinary approaches to global issues and the relationship of core concepts from chemistry, statistics, geology and other disciplines to life science concepts.
- Read and discuss articles related to current issues in biology.
- Take an active role in one's own education by taking personal responsibility for learning, learn to explain topics in students' own words, understanding the need to stay on top of material given.
- Work well independently and in small groups. Show self-direction and motivation, and contribute to group work.
- Understand the scientific method and critically evaluate scientific information as related to real world problems



COURSE CONTENT:

Week	Topic
Week 1	Scientific Method, Organization of Matter and Interaction Among Atoms.
Week 2	Structure and Properties of Biological Molecules; Cell Structure: Membrane and Organelle Form and Function
Week 3	Cellular Energetics: Metabolism and Cellular Respiration
Week 4	Cellular Energetics: Photosynthesis
Week 5	Molecular Basis of Inheritance
Week 6	Flow of Genetic Information and DNA Technology
Week 7	Structure and Adaptive Processes in Plants
Week 8	Transport Processes in Plants
Week 9	Plant Nutrition and Control Systems in Plants
Week 10	Integumentary, Skeletal and Nutrition Systems in Animals
Week 11	Respiratory, Circulatory and Immune Systems
Week 12	Excretory, Endocrine and Reproductive Systems
Week 13	Nervous, Sensory and Motor Mechanisms