

Global Learning Semesters

Course Syllabus

Course: BIOL-110 Elements in Biology

Department: Health and Life Sciences

Host Institution: University of Nicosia, Nicosia, Cyprus



| Course Summary | | |
|--------------------------|---------------------|--------------------------|
| Course Code | Course Title | Recommended Credit Hours |
| BIOL-110 | Elements In Biology | 3 |
| Semester Offered | Contact Hours | Prerequisites |
| Please contact us | 42-45 | None |
| Department | Level of Course | Language of Instruction |
| Health and Life Sciences | Lower Division | English |

Course Description

The purpose of the course is to give students an understanding of the basic principles of biology and to raise fundamental questions that will strengthen their interest in the science of life. Students get basic knowledge in biology and in the field of human genetics. The ethical and legal consequences as well as the psychological impact of the genetic screening are discussed during the course. Topics in human biology include the basics of heredity, physiology, reproduction and development. The course format includes 2h lectures and 1h per week tutorials on theoretical aspects and practical applications related to Nursing.

Prerequisites

None

Topic Areas

1. Introduction, Levels of Organization, Characteristics of Life, Major Groups of Living Organisms
2. Elements and Biological Compounds: ,Sugars, Nucleotides, Amino acids, Lipids
3. Cell Structure and Compartments
4. Metabolism, Enzymes
5. Respiration
6. Cell Communication, Signal Transduction (Hormones, Growth factors)
7. Mitosis, Meiosis, Mendelian Genetics
8. Chromosome, DNA, Structure, Replication,
9. Transcription, Translation, Control Of Gene Expression, DNA Technology
10. Vertebrate Immune System
11. Nervous System, Behavior
12. Reproduction, Development

Tutorial Sessions

1. The Microscope; units of measurements
2. Cell staining techniques, solutions, concentrations, dilutions
3. Diversity of Life: The six Kingdom Classification Scheme
4. Environmental risks to life
5. Cell structures and Function

6. Enzymes: activation, inhibition
7. Respiration, acidosis, alkalosis
8. Cell proliferation in wound healing, the cell cycle and cancer
9. Cell immune responses and diseases
10. Human Blood Typing; The blood coagulation / fibrinolysis system
11. Effect of UV on Cell Viability, Cell aging
12. Degenerative brain disorders
13. Birth control, Hormone replacement therapies

Readings and Resources

Required Textbook

1. Discover Biology, Second Edition (with Student CD-ROM)
by Michael L. Cain, Hans Damman, Robert A. Lue, Carol Kaesuk Yoon, Kaesuk Yoon W.W. Norton & Company; 2nd edition (March 2002) ISBN: 0393940551

Recommended Textbook

1. Biology: Concepts and Connections (4th Edition)
by Neil A. Campbell (Editor), Naomi E. Ervin Publisher: Benjamin/Cummings; 4th edition (July 22, 2002)
ISBN: 080536627X
2. Student Study Guide for Biology: Concepts & Connections
by Richard M. Liebaert, Neil A. Campbell Publisher: Addison-Wesley Publishing; 3rd edition (January 2000)
ISBN: 0805365877
3. Genome: The Autobiography of a Species in 23 Chapters [ABRIDGED]
by Matt Ridley Publisher: HarperCollins; (February 2000) ISBN: 0060194979
4. Biology (6th Edition) by Neil A. Campbell, Jane B. Reece Publisher: Benjamin/Cummings; 6th edition
(December 11, 2001) ISBN: 0805366245
5. Applied human biology for nurses by William C Fream Publisher: Baillière, Tindall & Cassell; 2nd ed edition
(1970) ISBN: 0702003387
6. Background notes to the study of human biology for nurses, by Tecwyn Roberts Publisher: Edward Arnold
(1970) ISBN: 0713141654
7. Human Biology: A Textbook for Nurses and Allied Professions (Macmillan Tropical Nursing and Health
Sciences) by Justus A. Akinsanya Publisher: Macmillan Education (July 24, 1980) ISBN: 0333258592
8. Instant Biology : From Single Cells to Human Beings, and Beyond by BOYCE RENSBERGER Publisher:
Ballantine Books; 1st ed edition (February 13, 1996) ISBN: 0449907015
9. Human Biology: An Evolutionary and Biocultural Perspective by Sara Stinson (Editor), Barry Bogin (Editor),
Rebecca Huss-Ashmore (Editor), Dennis O'Rourke (Editor) Publisher: Wiley-Liss; 1st edition (June 15,
2000) ISBN: 0471137464
10. Human Biology and Health: An Evolutionary Approach (Health and Disease) by Basiro Davey, Tim Halliday,
Mark Hirst Publisher: Open University Press; 3rd edition (May 1, 2001) ISBN: 0335208398