

Biology

Cell biology

- chemical components of the cell, macromolecules
- organization of procaryotic and eucaryotic cell
- animal and plant cell
- cell organelles and their structure
- cell membrane, structure and transports
- endocytosis, exocytosis
- cellular respiration
- photosynthesis
- cell nucleus, nucleolus, euchromatin, heterochromatin
- DNA structure, replication
- cell cycle
- cell division, mitosis, meiosis
- chromosomes

Reproduction and development

- meiosis and differentiation of germ cells
- fertilization
- cleavage
- gastrulation
- neurulation
- differentiation

Genetics

- genotype, phenotype
- alleles, homozygotes, heterozygotes
- Mendelian genetics and types of inheritance
- monohybrid cross
- multiple alleles
- dyhybrid cross
- X linked inheritance
- linkage, chromosome map
- sex determination
- karyotype
- the genetic code, transcription and translation
- mutations
- genetics of procaryotic cell – procaryotic chromosome, plasmids
- bacteriophages
- recombinant DNA, biotechnology

Human organism – anatomy and physiology

- circulatory system, heart
- blood, blood groups, transfusion
- respiratory system
- immune system
- musculoskeletal system
- digestive system, exocrine glands, enzymesw
- endocrine glands, hormones
- kidney and urinary tract, body fluids
- central nervous system
- sense organs – anatomy and function (eye, ear, nose and tongue)
- skin
- regulation of body temperature
- reproductive system, male and female
- pregnancy
- parturition

Evolution

- chemical and biological evolution
- human evolution
- Darwinian evolution theory

Ecology

- basic ecological terms – environment, abiotic and biotic components
- ecosystems
- biosphere
- human influence on ecosystems, pollution