

MPAS Approved Course Descriptions

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Biology I with Lab (TCCNS BIOL 1406)

Biology I Lecture (TCCNS BIOL 1306)

This course provides the students with a strong foundation in cellular and molecular biology. Topics include biochemistry, energy metabolism, molecular bases of gene regulation and protein functions, cell division and control, and cell signaling. This course is required for all biology majors and is not recommended for non-science majors.

Biology I Lab (TCCNS BIOL 1106)

Fundamental techniques and instruments used in cellular biological research will be taught while emphasizing safety, measurements, and scientific methods. Students will design and implement controlled experiments, identify independent and dependent variables, analyze data, draw conclusions, and communicate results with appropriate tables and graphs in oral presentations and written papers.

Biology II with Lab (TCCNS BIOL 1407), or Upper-Level Biology with Lab

Biology II Lecture (TCCNS BIOL 1307)

This course provides science majors with a foundation in organismal biology, Mendelian and population genetics, evolution and ecology. Topic include: patterns of inheritance, genetics, evolution, speciation, phylogenetics, and behavioral population, community, and ecosystem ecology. This course is required for all biology majors and is not recommended for non-science majors.

Biology II Lab (TCCNS BIOL 1107)

This course introduces the students to the basics of experimental design, scientific method and inquiry, use of statistical analyses and writing research papers. Topics covered include Mendelian and population genetics, natural selection, population ecology, phylogeny, and behavioral ecology.

Human Anatomy & Physiology I with Lab (TCCNS BIOL 2401)

Human Anatomy & Physiology I Lecture (TCCNS BIOL 2301)

An applied systematic study of the structure and function of the human body designed for students considering a career in the health professions. Anatomical terminology and the structure and function of cells, tissues, and the body systems such as integumentary, skeletal, muscular, nervous and sensory organs in covered.

Human Anatomy & Physiology I Lab (TCCNS BIOL 2101)

Structure and function of the human body including anatomical terminology, cells, tissues, integumentary, skeletal, muscular, nervous, and sensory organ systems.

Human Anatomy & Physiology II with Lab (TCCNS BIOL 2402)

Human Anatomy & Physiology II Lecture (TCCNS BIOL 2302)

A continuation of Human Anatomy and Physiology I designed for students considering a career in the health professions. The structure and function of the following body systems are covered: digestive, respiratory, cardiovascular, endocrine, immune, renal, and reproductive.

Human Anatomy & Physiology II Lab (TCCNS BIOL 2102)

Structure and function of the human body including digestive, respiratory, cardiovascular, endocrine, immune, renal, and reproductive systems.

General Chemistry I with Lab (TCCNS CHEM 1411)

General Chemistry I Lecture (TCCNS CHEM 1311)

Introduction to modern theories of atomic structure and chemical bonding; chemical reactions; stoichiometry; states of matter; solutions; equilibrium; acids and bases; coordination chemistry.

General Chemistry II Lab (TCCNS CHEM 1111)

First of two laboratory courses in general chemistry for science-related majors. Course introduces the students to the basics of experimental measurements, including density, separation techniques, formula determinations, titrations, thermodynamics, gas laws, and descriptive chemistry.

General Chemistry II with Lab (TCCNS CHEM 1412)

General Chemistry II Lecture (TCCNS CHEM 1312)

Theory and applications of oxidation-reductions systems; thermodynamics and kinetics; complex equilibria and solubility product; nuclear chemistry; descriptive inorganic and organic chemistry.

General Chemistry II Lab (TCCNS CHEM 1112)

Introduction to analytical and synthetic methods and to quantitative techniques to both inorganic and organic compounds with emphasis on an investigative approach.

Microbiology with Lab (TCCNS BIOL 2421)

Microbiology Lecture (TCCNS BIOL 2321)

Principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes.

Microbiology Lab (TCCNS BIOL 2121)

Laboratory activities will reinforce principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts, and the environment. Laboratory application include microbial techniques including staining, microscopy, cultivation of microbes, and handling of aseptic cultures and materials in the laboratory, biochemical aspects of microbes, chemical, physical and chemotherapeutic control of microbial growth, sanitary analysis of municipal water systems, determination of a bacterial unknown.

Organic Chemistry I with Lab (TCCNS CHEM 2423)

Organic Chemistry I Lecture (TCCNS CHEM 2323)

Introduction to chemistry of compounds of carbon; general principles and their application to various industrial and biological processes.

Organic Chemistry I Lab (TCCNS CHEM 2123)

Operations and techniques of elementary organic chemistry laboratory; preparation, reactions and properties of representative organic compounds.

Genetics (TCCNS BIOL 2316)

An introduction to basic principles of Genetics by studies of Mendelian, molecular, quantitative and population genetics. Topics include: classical transmission genetics, and gene mapping, DNA replication and repair, transcription, translation, control of gene expression, genetic engineering techniques, Hardy-Weinberg equilibrium, evolutionary change via natural selection, and genetic drift.

Psychology - Introductory, General, Abnormal, or Developmental

Introductory/General Psychology (TCCNS PSYC 2301)

A survey of the major principles derived from research on human and animal behavior. Topics studied include learning, thinking, motivation, emotion, personality, the senses, perception, and the form and functions of the nervous system.

Abnormal Psychology (TCCNS PSYC 2320)

Survey of behavior pathology; functional and organic psychoses, psychoneurosis, character disorders, psychophysiological disorders, alcohol and drug addiction and mental retardation; therapeutic and diagnostic methods.

Developmental Psychology (TCCNS PSYC 2314)

Survey of the psychology of human development from the pre-natal period through adulthood. Emphasis placed on cognitive, motivational, and physiological processes of development in childhood and adolescence.

Statistics (TCCNS MATH 1342 or MATH 1442 or PSYC 2317)

A course covering linear and quadratic equations, inequalities, functions and their graphs, logarithms, systems of equations, and applications of mathematics. Special emphasis on statistical concepts including linear and quadratic regression, distributions confidence intervals, & hypothesis testing.