

COURSE/ASSIGNMENT TITLES AND DESCRIPTIONS (from Mo-DESE)

Aerospace (135500) - Principles of flight within and outside of the earth's atmosphere. Focus is largely on space flight, both manned and unmanned. Topics in astronomy that bear on aerospace will be covered as well as considerations of long-term space colonization and deep-space probes.

Applied Science (134642) - Includes materials that will facilitate teaching the concepts and principles of biology and chemistry in the context of real-world applications. These applications may address occupational, societal or personal issues. The science content that is relevant to the applications and issues comprises a set of concepts and principles that are central to biology and chemistry. Instructional units for applied biology/chemistry include: natural resources; water, air, and other gases; continuity of life; life processes; micro-organisms, synthetic materials, waste and waste management, and community of life (CIP Code 41.0100)

Astronomy (133810) - A study of the sun, the solar system, galaxies, nebulae, "black holes," comets and lesser space bodies. Integrated into the course are discussions and student applications of astronomical instruments. Some principles of space flight are also presented.

Biology (134200) - Level I: This course is designed to provide fundamental concepts of life and life processes. Topics might include human systems and cycles; components, interactions, and patterns of the biological planet; structures and composition of organisms; interaction with the environment; and life cycles. This level might be taught in a middle school setting as life science. Level II: This course would include similar topics but with a focus on cell structure and function, hierarchical organization, reproduction, cell interface with its environment, cytokineses, genetics, and taxonomic systems. Special courses at this level might include environmental science, animal physiology, genetics, or ecology. Level III: This course usually covers biological systems in more detail, concentrating on a particular subtopic: botany, zoology, physiology and anatomy, or microbiology.

Botany (134210) - Plants as living systems are covered in-depth. The microscopic forms through the flowering plants are surveyed. Special attention is paid to the vascular plants in terms of their anatomy, physiology, morphology and taxonomy. Plant ecology is also studied. The process of photosynthesis is stressed. Botany is a laboratory course.

Chemistry (134600) - Level I: This course might include topics such as: physical and chemical properties of matter, properties of solutions, forms and types of energy, phase changes, and behaviors of liquids, gases, and solids. This course may be taught at the middle school level. Level II: This level might include topics such as: the composition and reactions of substances, acid/base and oxidation/reduction reactions, atomic structure, chemical formulas and equations, and nuclear reactions. Level III: This level might cover chemical principles and reactions in more detail, concentrating on a particular subtopic such as organic chemistry, chromatography and spectrometry, nuclear chemistry, electrochemistry, or macromolecules.

Ecology (134215) - Ecology and environmental science stress the interrelationships between plants and animals and the physical surroundings. Emphasis is usually placed on man's influence on these relationships. Wildlife conservation principles and practices are studied.

Geology (133820) - A study of the solid portion of the Earth, primarily the Earth's crust. Rock types and their formation is the primary focus. Normally, volcanic processes and the processes of erosion and deposition are stressed as they relate to rock formation, distribution, and classification. Laboratory work is common.

Life Science (usually 7th Grade) (134230) - Stresses living things and life processes. Often, human biology is stressed along with environmental science. Generally, life science is a simplified version of general biology in which students receive initial exposure to fundamental laboratory techniques in the life sciences.

Physical Science (usually 9th Grade) (135010) - An introduction to the concepts of matter and energy and their interactions. Elementary atomic and kinetic theory are discussed. Also, the basic principles of work, force, mass, weight, volume, and the forms of energy are introduced.

Physics (135900) - Level I: This course might include topics such as the characteristics, properties, and change processes of matter; definition and causes of motion; equilibrium; kinds of energy; static and moving charges; magnetism; and introductions to waves, light, and sound. This level may be taught in the middle school. Level II: This level might include the relationships between electricity and magnetism and between matter and energy; the laws of conservation; energy transformation; and wave and particle phenomena. Level III: This level would present more detailed studies of the second level topics, concentrating on particular subtopics such as optics, thermodynamics, quantum physics, electromagnetism, or fluid dynamics.

Physiology and Anatomy (134221) - The physical structure and function of vertebrate systems is studied with the focus being on comparative studies. Human systems are strongly emphasized. This course should be fairly technical and highly laboratory-oriented.

Principles of Technology (135910) - A broad, technically-oriented course that provides secondary vocational students with a foundation for more education and training in advanced-technology career paths. Each unit deals with one principle as it applies in the four energy systems--mechanical, fluid, thermal, and electrical--that make up both simple and complex technological devices and equipment. (CIP Code 40.0899)

Science, General (135000) - This course typically draws from the principles earth/space science, biology, chemistry, and physics. The material is organized around common themes such as systems, models, energy, patterns, change, stability, and structure. Appropriate aspects from each science area are used to investigate applications of the theme. This can be a multi-year course covering elementary, intermediate, middle, or high school years either in total or in part.

Zoology (134220) - Considers animal life from the unicellular level through the highest vertebrates. Animal growth and development, reproduction, taxonomy, anatomy, physiology, genetics, evolution and conservation are among the topics covered. Zoology is a laboratory-oriented course.