

SCIENCE

Science courses emphasize the scientific method and will include laboratory instruction 40% of the instructional time.

S101/S102 BIOLOGY

Peims#03010200

Recommended Grade Placement: 9-11

(BIO)

1 credit - state

Prerequisite: None.

In this two semester course, students study structures and functions of cells and viruses; growth and development of organisms; cells, tissues, and organs; nucleic acids, principles of genetics and heredity; biological evolution; taxonomy and the diversity of life; metabolism and energy transfers in living organisms; living systems; homeostasis; ecosystems; plants, animals and the environment.

The investigations include the use of laboratory equipment in the collection and analysis of biological data, and the application of concepts to provide practical experiences upon which to build an understanding and appreciation of the biotic world.

S205/S206 BIOLOGY PRE-AP

Peims #03010200

Recommended Grade Placement: 9-11

(BIO)

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: Additional requirements may be imposed at individual campuses.

This two semester course goes beyond the scope of the regular biology course and begins a detailed and rigorous study of cellular biology, biochemistry, genetics, classification, the five kingdoms, and comparative anatomy. Lab investigations are designed to support the student's continued success in the subsequent AP Biology course. All Students enrolled in this and all Pre-AP and AP Science courses must produce and present a project based on science investigation as part of the advanced expectations of these courses. Participation in Science Fair fulfills this requirement.

S117/S118 BIOLOGY IB PREPARATORY (El Dorado High School Only)

Peims #03010200

Recommended Grade Placement: 9-11

(BIO)

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: IB Guidelines.

This two semester course goes beyond the scope of the regular biology course and begins a detailed and rigorous study of cellular biology, biochemistry, genetics, classification, the five kingdoms, and comparative anatomy. Lab investigations are designed to support the student's continued success in the subsequent IB Biology course.

S121/S122 BIOLOGY RETAKE

Peims #03010200

Recommended Grade Placement: 9-12

(BIO)

1 credit - state

Prerequisite: Previously failed Biology I.

In this two semester course, students study structures and functions of cells and viruses; growth and development of organisms; cells, tissues, and organs; nucleic acids, principles of genetics and heredity; biological evolution; taxonomy and the diversity of life; metabolism and energy transfers in living organisms; living systems; homeostasis; ecosystems; plants, animals and the environment.

The investigations include the use of laboratory equipment in the collection and analysis of biological data, and the application of concepts to provide practical experiences upon which to build an understanding and appreciation of the biotic. This course is designed for those students who must "retake" Biology due to failure.

S301/S302 BIOLOGY ADVANCED PLACEMENT (AP)

Peims #A3010200

Recommended Grade Placement: 11-12

(APBIO)

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisites: Successful completion of Biology, Chemistry. Additional requirements may be imposed at individual campuses.

This two semester course is designed to be the equivalent of a college introductory biology course usually taken by biology majors during their first year. Students study molecules and cells, heredity and evolution,

Revised 1-16-19

and organisms and populations. Lab investigations are designed to support the student's success on the AP Biology exam. Taking the AP Biology test at the end of the course is strongly encouraged. Upon completion of this course, students are strongly encouraged to take the AP Exam and, depending on their score, may receive college credit. All Students enrolled in this and all Pre-AP and AP Science courses must produce and present a project based on science investigation as part of the advanced expectations of these courses. Participation in Science Fair fulfills this requirement.

S857/S858 BIOLOGY I SL IB (El Dorado High School Only) (IBBIOSL)
Peims #I3010201 Recommended Grade Placement: 11-12 1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.
Prerequisites: IB Guidelines

This two semester course is designed to lay the foundation for student success in the second year of IB Biology II. The course will provide students with the investigative inquiry skills necessary to effectively conduct and communicate scientific research. Students will study the chemistry of life, cell theory, cells structure and energy, molecular biology, genetics ecology and evolution, human health and physiology. at a level and depth in accordance with the requirements of the IB program. This class goes beyond the usual course in content and depth. . Students will be required to complete a group project which will require some work during the intercession periods. This course serves as the first year of the IB Biology (Higher Level) sequence.

S851/S852 BIOLOGY I HL IB (El Dorado High School Only) (IBBIOHL)
Peims #I3010202 Recommended Grade Placement: 11-12 1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisites: IB Guidelines. In this course students will: 1. Appreciate scientific study and creativity within a global context through stimulating and challenging opportunities 2. Acquire a body of knowledge, methods and techniques that characterize science and technology 3. Apply and use a body of knowledge, methods and techniques that characterize science and technology 4. Develop an ability to analyze, evaluate and synthesize scientific information 5. Develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities 6. Develop experimental and investigative scientific skills including the use of current technologies 7. Develop and apply 21st century communication skills in the study of science 8. Become critically aware, as global citizens, of the ethical implications of using science and technology 9. Develop an appreciation of the possibilities and limitations of science and technology 10. Develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

S113/S114 INTEGRATED PHYSICS AND CHEMISTRY (IPC)
Peims #03060201 Recommended Grade Placement: 9-10 1 credit - state

Prerequisite: None.

In this two semester course the students study the disciplines of physics and chemistry in the following topics: laboratory safety and science process skills; motion, work, simple machines; energy, heat and temperature, waves, sound, light; electricity and magnetism; properties and structure of matter; atoms and the periodic table; chemical reactions; solutions, acid, base and nuclear chemistry. The two semester course integrates chemical, physical and earth science concepts when applicable and equips students with a basic understanding of the physical and chemical world surrounding them.

S105/S106 CHEMISTRY (CHEM)
Peims #03040000 Recommended Grade Placement: 9-12 1 credit - state

Prerequisites: Biology, Algebra I.

Additional prerequisites may be imposed at individual campuses.

In this two semester course, Chemistry students study characteristics of matter; energy transformations during physical and chemical changes; atomic structure; periodic table of elements; behavior of gases; bonding; nuclear fusion and nuclear fission; oxidation-reduction reactions; chemical equations; solutes; properties of solutions; acids and bases; and chemical reactions.

S209/S210 CHEMISTRY PRE-AP

(CHEM)

Peims #03040000

Recommended Grade Placement: 9-12

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisites: Successful completion of Biology, Algebra I.

This two semester course goes beyond the scope of the regular chemistry course and emphasizes quantum mechanics, stoichiometry, descriptive and inorganic chemistry. Lab investigations are designed to support the student's continued success in the subsequent AP Chemistry course. All Students enrolled in this and all Pre-AP and AP Science courses must produce and present a project based on science investigation as part of the advanced expectations of these courses. Participation in Science Fair fulfills this requirement.

S115/S116 CHEMISTRY IB PREPARATORY (El Dorado High School Only)

(CHEM)

Peims # 03040000

Recommended Grade Placement: 9-10

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: IB Guidelines

Comparable to an Honors Chemistry I course, students will learn the basics of scientific investigation as it pertains to chemistry. Topics introduced include atomic theory, bonding, states of matter, kinetics, acids and bases, and oxidation and reduction. The course introduces students to methods of applying and using scientific facts and concepts and develops students' abilities to analyze and evaluate hypotheses, research questions and predictions. This course is designed to prepare students to be successful in IB Biology SL.

S305/S306 CHEMISTRY ADVANCED PLACEMENT (AP)

(APCHEM)

Peims # A3040000

Recommended Grade Placement: 11-12

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisites: Successful completion of Chemistry, Algebra II. Additional requirements may be imposed at individual campuses.

This two semester AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first college year. Students study structure of matter, states of matter, stoichiometry, equilibrium, kinetics, thermodynamics, and descriptive chemistry. Lab investigations are designed to support the student's success on the AP Chemistry exam. Taking the AP Chemistry exam at the end of the course is strongly encouraged. Upon completion of this course, students are strongly encouraged to take the AP Exam and, depending on their score, may receive college credit. All Students enrolled in this and all Pre-AP and AP Science courses must produce and present a project based on science investigation as part of the advanced expectations of these courses. Participation in Science Fair fulfills this requirement.

S853/S854 CHEMISTRY I SL IB (El Dorado High School Only)

(IBCHEMSL)

Peims #I3040002

Recommended Grade Placement: 11-12

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite IB Guidelines

This two semester course is designed to lay the foundation for student success in the second year of IB Chemistry II. Consequently students will study the states of matter, atomic theory, periodicity, bonding, stoichiometry, and energetics at a level and depth in accordance with the requirements of the IB program. This course is designed for students who show advanced interest and aptitude for chemistry. This class goes beyond the usual course in content and depth. Students will demonstrate the manipulative skills necessary to conduct scientific investigations and will communicate through oral and written presentations the results of their investigations. Students will also be required to complete a group project which will require some work during the intercession periods. This course serves as the first year of the IB Chemistry (High Level) sequence.

S813/S814 CHEMISTRY I HL IB (El Dorado High School Only) (IBCHEMHL)
Peims #I3040003 Recommended Grade Placement: 11-12 1 credit - state
Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.
Prerequisite IB Guidelines: In this course students will: 1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities 2. Acquire a body of knowledge, methods and techniques that characterize science and technology 3. Apply and use a body of knowledge, methods and techniques that characterize science and technology 4. Develop an ability to analyze, evaluate and synthesize scientific information 5. Develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities 6. Develop experimental and investigative scientific skills including the use of current technologies 7. Develop and apply 21st century communication skills in the study of science 8. Become critically aware, as global citizens, of the ethical implications of using science and technology 9. Develop an appreciation of the possibilities and limitations of science and technology 10. Develop an understanding of the relationships between science.

S107/S108 PHYSICS (PHYSICS)
Peims #03050000 Recommended Grade Placement: 11-12 1 credit - state
Prerequisites: Two years of science, Algebra I, and Geometry.
In this two semester course, physics students study a variety of topics that include: laws of motion; changes within physical systems; conservation of energy and momentum; force; thermodynamics; characteristics and behavior of waves; and quantum physics.

S119/S120 PHYSICS IB PREPARATORY (El Dorado High School Only) (PHYSICS)
Peims #03050000 Recommended Grade Placement: 10 1 credit – state
Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.
Prerequisite: IB Guidelines
Pre-IB Physics studies the nature of motion, forces, energy, matter, heat, sound, light and the inside of atoms. The course treats physics conceptually rather than mathematically; however, a strong math background is required, particularly for students going on into SL and HL Physics. Prerequisite: Pre-IB Science Survey or Pre-IB Biology

S901 or S902 AP PHYSICS C: MECHANICS (APPHYSCM)
Peims # A3050006 Recommended Grade Placement: 11-12 1 credit – state
Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.
Prerequisite: students should have taken or be concurrently taking calculus.
AP Physics C: Mechanics is equivalent to a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in physical science or engineering. The course explores topics such as kinematics; Newton's laws of motion; work, energy and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. Introductory differential and integral calculus is used throughout the course.

S903 or S904 AP PHYSICS C: ELECTRICITY & MAGNETISM (APPHYSC E)
Peims # A3050005 Recommended Grade Placement: 11-12 1 credit - state
Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.
Prerequisite: students should have taken or be concurrently taking calculus.
AP Physics C: Electricity and Magnetism is a one-semester course, following Physics C: Mechanics that is a calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in physical science or engineering. The course explores topics such as electrostatics; conductors, capacitors, and dielectrics; electric circuits; magnetic fields; and electromagnetism. Introductory differential and integral calculus is used throughout the course.

S815/S816 AP PHYSICS 1: Algebra Based (APPHYS1)
Peims # A3050003 Recommended Grade Placement: 11-12 1 credit – state

Prerequisites: Completed Geometry and concurrently in Algebra II

The AP Physics 1 and 2 courses focus on the big ideas typically included in the first and second semesters of an algebra-based, introductory college level physics sequence and provide students with enduring understandings to support future advanced course work in the sciences. Through inquiry based learning, students will develop critical thinking and reasoning skills, as defined by the AP Science Practices.

S817/S818 AP PHYSICS 2: Algebra Based (APPHYS2)
Peims # A3050004 Recommended Grade Placement 11-12 1 credit – state

Prerequisites: AP Physics 1

The AP Physics 1 and 2 courses focus on the big ideas typically included in the first and second semesters of an algebra-based, introductory college level physics sequence and provide students with enduring understandings to support future advanced course work in the sciences. Through inquiry based learning, students will develop critical thinking and reasoning skills, as defined by the AP Science Practices.

S855/S856 PHYSICS I SL IB (El Dorado High School Only) (IBPHYSSL)
Peims #I3050002 Recommended Grade Placement: 11-12 1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: IB Guidelines

Physics is the quantitative study of the interaction of matter and energy. In this rigorous, algebra-based course, students use principle-driven analytic thinking to predict and model the behavior of physical systems. Laboratory time is largely devoted to active learning in order to challenge students' misconceptions and construct concepts like velocity, acceleration, and force. Students extend these concepts and associated principles to problem-solve in novel applications using abstract algebraic reasoning. Topics included in the course are mechanics, electricity, rotation, oscillatory motion, waves, acoustics, optics, and magnetism. This course serves as the first year of the IB Physics (Standard Level) sequence.

S861/S862 IB PHYSICS HIGHER LEVEL (El Dorado High School Only) (IBPHYHL)
Peims #I3050003 Recommended Grade Placement: 9-12 1 credit – state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: IB Guidelines

This two semester course teaches the following information. Through the overarching theme of the nature of science, the aims of the IB physics course are to enable students to: 1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities, 2. acquire a body of knowledge, methods and techniques that characterize science and technology, 3. apply and use a body of knowledge, methods and techniques that characterize science and technology, 4. develop an ability to analyze, evaluate and synthesize scientific information, 5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities, 6. develop experimental and investigative scientific skills including the use of current technologies, 7. develop and apply 21st century communication skills in the study of science, 8. become critically aware, as global citizens, of the ethical implications of using science and technology, 9. develop an appreciation of the possibilities and limitations of science and technology and 10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

S863 IB PHYSICS HIGHER LEVEL (El Dorado High School Only) (IBPHYHL)
Peims #I3050003 Recommended Grade Placement: 9-12 1 credit – state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: IB Guidelines

This ONE SEMESTER COURSE will be the second semester component of microeconomics for IB students. Students will earn 1.0 credit for the one semester course. Through the overarching theme of the nature of science, the aims of the IB physics course are to enable students to: 1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities, 2. acquire a body of knowledge, methods and techniques that characterize science and technology, 3. apply and use a body of knowledge, methods and techniques that characterize science and technology, 4. develop an ability

Revised 1-16-19

to analyze, evaluate and synthesize scientific information, 5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities, 6. develop experimental and investigative scientific skills including the use of current technologies, 7. develop and apply 21st century communication skills in the study of science, 8. become critically aware, as global citizens, of the ethical implications of using science and technology, 9. develop an appreciation of the possibilities and limitations of science and technology and 10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

CO71N1 PRINCIPLES OF TECHNOLOGY (PHYSICS CREDIT) (PRINTECH)

PEIMS #13037100 Recommended Grade Placement: 11 1 credit – state

In Principles of Technology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Various systems will be described in terms of space, time, energy, and matter. Students will study a variety of topics that include laws of motion, conservation of energy, momentum, electricity, magnetism, thermodynamics, and characteristics and behavior of waves. Students will apply physics concepts and perform laboratory experimentations for at least 40% of instructional time using safe practices.

S111/S112 ASTRONOMY (ASTRMY)

Peims #03060100 Recommended Grade Placement: 11-12 1 credit - state

Prerequisite: Three years of science.

In this two semester course, Astronomy students study the following topics: information about the universe; scientific theories of the evolution of the universe; characteristics and the life cycle of stars; exploration of the universe; role of the Sun in our solar system; planets; and the orientation and placement of the Earth.

S131/S132 EARTH AND SPACE SCIENCE (ESS)

Peims # 03060200 Recommended Placement: 11-12 1 credit - state

Prerequisite: Three years of science (one which may be taken concurrently) and 3 years of mathematics (one which may be taken concurrently).

In this two semester course, students will study the Earth's systems in space and time to include the origin, evolution, and properties of Earth within a chronological framework. Students will study Earth and Space using the following three strands throughout each theme: systems, energy, and relevance. These are to include the use of patterns and cycles that are used to predict how the Earth's systems change over time, the uneven distribution of external and internal energy which are the driving forces of various cycles on Earth, and the changes on Earth due to natural and human processes.

S103/S104 ENVIRONMENTAL SYSTEMS (ENVIRSYS)

Peims #03020000 Recommended Grade Placement: 11-12 1 credit - state

Prerequisite: Biology I.

In this two semester course, Environmental Science students study biotic and abiotic factors in habitats; ecosystems and biomes; interrelationships among resources and an environmental system; sources and flow of energy through an environmental system; relationship between carrying capacity and changes in populations and ecosystems; and changes in environments.

S213/S214 ENVIRONMENTAL SYSTEMS PRE-AP (ENVIRSYS)

Peims #03020000 Recommended Grade Placement: 11-12 1 credit – state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisite: Successful completion of Algebra I, Biology and Chemistry.

In this two semester course, Environmental Science students study biotic and a biotic factors in habitats; ecosystems and biomes; interrelationships among resources and an environmental system; sources and flow of energy through an environmental system; relationship between carrying capacity and changes in populations and ecosystems; and changes in environments. Lab investigations are designed to support the student's continued success in the subsequent AP Environmental Science course. This course is designated for the student with advanced interest and aptitude for science. All Students enrolled in this and all Pre-AP and AP Science courses must produce and present a project based on science investigation as part of the advanced expectations of these courses. Participation in Science Fair fulfills this requirement.

S303/S304 ENVIRONMENTAL SYSTEMS ADVANCED PLACEMENT (APENVIR)

Peims # A3020000

Recommended Grade Placement: 12

1 credit - state

Weight: Reference District Policy EIC Local as weights are dependent upon high school year entry date.

Prerequisites: Successful completion of Algebra I, Biology, Chemistry. Additional requirements may be imposed at individual campuses.

In this two semester course, the goal of the AP Environmental Science student is to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. The course focus is on the "real science" behind environmental problems and issues. Laboratory and field study are an important element of the course. Students use lab skills and the scientific process to complete a science fair project. Taking the AP Environmental Science test at the end of the course is recommended. Upon completion of this course, students are strongly encouraged to take the AP Exam and, depending on their score, may receive college credit. All Students enrolled in this and all Pre-AP and AP Science courses must produce and present a project based on science investigation as part of the advanced expectations of these courses. Participation in Science Fair fulfills this requirement.

S905/S906 AQUATIC SCIENCE

(AQUA SCI)

Peims #03030000

Recommended Grade Placement: 12

1 credit – state

Prerequisites: None

In Aquatic Science, students study the interactions of biotic and abiotic components in aquatic environments, including impacts on aquatic systems. Investigations and field work in this course may emphasize fresh water or marine aspects of aquatic science, depending primarily upon the natural resources available for study near the school. Students who successfully complete Aquatic Science will acquire knowledge about a variety of aquatic systems, conduct investigations and observations of aquatic environments, work collaboratively with peers, and develop critical-thinking and problem-solving skills.

CO72N1 SCIENTIFIC RESEARCH AND DESIGN I

(SCIRD)

PEIMS #13037200

Recommended Grade Placement: 11-12

1 credit – state

Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.

Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).
(4) Scientific systems. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

CO77N1 SCIENTIFIC RESEARCH AND DESIGN II

(SCIRD2)

PEIMS #13037210

Recommended Grade Placement: 12

1 credit – state

Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.

Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).
(4) Scientific systems. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

CH06N1 ANATOMY AND PHYSIOLOGY (ANATPHYS)
PEIMS #13020600 Recommended Grade Placement: 11-12 1 credit – state
Schools Offering (All Campuses)

- (1) Anatomy and Physiology. In Anatomy and Physiology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.
- (2) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.
- (3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.
- (4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).
- (5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

CH07N1 MEDICAL MICROBIOLOGY (MICRO)
PEIMS #13020700 Recommended Grade Placement: 9-12 ½ -1 credit – state
Schools Offering (El Dorado and Socorro)

- (1) Medical Microbiology. Students in Medical Microbiology explore the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, laboratory procedures, identifying microorganisms, drug resistant organisms, and emerging diseases.
- (2) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.
- (3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.
- (4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods

Revised 1-16-19

(scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.