

**Certification Examinations for Oklahoma Educators (CEOE)  
Framework Development Correlation Table**

The Framework Development Correlation Table provides information about possible alignment of some of the knowledge and skills contained within the CEOE framework for a test field with other conceptualizations of the knowledge and skills of a field. It was produced using Oklahoma and educator association standards documents that were publicly available at the time of framework development. In the preparation of the Correlation Table, the alignment of a CEOE test competency with standards documents was indicated if the content of a standard was covered, in whole or in part, by the CEOE test competency. For some CEOE test competencies, multiple standards from Oklahoma, or other documents were aligned with the content of a CEOE test competency. An indication of alignment in the Correlation Table does not necessarily imply complete congruence of the content of a CEOE test competency with the standard.

**Matrix Showing Match between Oklahoma Subject Matter Competencies for Physics and CEOE Competencies**

Oklahoma Subject Matter Competencies	CEOE Competencies
<b>Unifying Concepts</b>	
a. System, Order, and Organization	0001 Connections among science, mathematics, and technology  0010 Concepts of energy, work, and power, and principles of conservation of energy and momentum  0015 Components and properties of direct current circuits  0017 Alternating currents and the operation of conductors, semiconductors, and superconductors  0024 Physical models of atomic structure and the nature of elementary particles

Oklahoma Subject Matter Competencies	CEOE Competencies
<p>b. Evidence, Models, and Explanation</p>	<p>0001 Connections among science, mathematics, and technology</p> <p>0003 The process of scientific inquiry and experimentation</p> <p>0004 Processes of collecting, organizing, and analyzing scientific data</p> <p>0008 The laws of motion, including relativity</p> <p>0013 The kinetic-molecular theory and its relationship to thermodynamics</p> <p>0023 The photoelectric effect, quantum theory, and the dual nature of light and matter</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p>
<p>c. Constancy, Change, Equilibrium, and Measurement</p>	<p>0001 Connections among science, mathematics, and technology</p> <p>0004 Processes of collecting, organizing, and analyzing scientific data</p> <p>0006 Concepts of motion in one and two dimensions, solving of problems related to motion</p> <p>0007 Characteristics of forces, methods of measuring force, and solving problems involving force</p> <p>0008 The laws of motion, including relativity</p> <p>0009 Uniform circular and simple harmonic motion</p>

Oklahoma Subject Matter Competencies	CEOE Competencies
	<p>0012 Concept of heat energy and the laws of thermodynamics</p> <p>0013 The kinetic-molecular theory and its relationship to thermodynamics</p> <p>0018 Waves and problems involving wave motion</p> <p>0019 Principles of wave reflection, refraction, diffraction, interference, polarization, dispersion, and the Doppler effect</p> <p>0020 Characteristics of sound waves and their production and transmission</p> <p>0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
d. Form and Function	<p>0010 Concepts of energy, work, and power, and principles of conservation of energy and momentum</p> <p>0011 Dynamics of rotational motion and the properties of fluids</p> <p>0013 The kinetic-molecular theory and its relationship to thermodynamics</p> <p>0018 Waves and problems involving wave motion</p> <p>0019 Principles of wave reflection, refraction, diffraction, interference, polarization, dispersion, and the Doppler effect</p> <p>0020 Characteristics of sound waves and their production and transmission</p>

Oklahoma Subject Matter Competencies	CEOE Competencies
	0021 Characteristics and production of electromagnetic waves  0022 Principles and applications of lenses and mirrors
e. Abilities of Technological Design	0001 Connections among science, mathematics, and technology  0015 Components and properties of direct current circuits  0016 Magnetic fields and electromagnetic induction  0017 Alternating currents and the operation of conductors, semiconductors, and superconductors  0021 Characteristics and production of electromagnetic waves  0022 Principles and applications of lenses and mirrors  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
f. Understanding about Science and Technology	0001 Connections among science, mathematics, and technology  0002 Historical and contemporary contexts of the study of physics  0003 The process of scientific inquiry and experimentation  0004 Processes of collecting, organizing, and analyzing scientific data  0015 Components and properties of direct current circuits  0016 Magnetic fields and electromagnetic induction

Oklahoma Subject Matter Competencies	CEOE Competencies
	<p>0017 Alternating currents and the operation of conductors, semiconductors, and superconductors</p> <p>0021 Characteristics and production of electromagnetic waves</p> <p>0022 Principles and applications of lenses and mirrors</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
g. Science as a Human Endeavor	<p>0002 Historical and contemporary contexts of the study of physics</p> <p>0003 The process of scientific inquiry and experimentation</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
h. Nature of Science	<p>0001 Connections among science, mathematics, and technology</p> <p>0002 Historical and contemporary contexts of the study of physics</p> <p>0003 The process of scientific inquiry and experimentation</p> <p>0004 Processes of collecting, organizing, and analyzing scientific data</p> <p>0005 Proper use of equipment, materials,</p>

Oklahoma Subject Matter Competencies	CEOE Competencies
	and chemicals in physics
i. Nature of Scientific Knowledge	0001 Connections among science, mathematics, and technology 0002 Historical and contemporary contexts of the study of physics 0003 The process of scientific inquiry and experimentation 0004 Processes of collecting, organizing, and analyzing scientific data
j. History of Science	0002 Historical and contemporary contexts of the study of physics 0003 The process of scientific inquiry and experimentation 0024 Physical models of atomic structure and the nature of elementary particles
k. Historical Perspectives	0002 Historical and contemporary contexts of the study of physics 0003 The process of scientific inquiry and experimentation 0024 Physical models of atomic structure and the nature of elementary particles
l. Personal Health	0002 Historical and contemporary contexts of the study of physics 0005 Proper use of equipment, materials, and chemicals in physics 022 Principles and applications of lenses and mirrors 0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
m. Personal and Community Health	0002 Historical and contemporary

Oklahoma Subject Matter Competencies	CEOE Competencies
	contexts of the study of physics 0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them

Oklahoma Subject Matter Competencies	CEOE Competencies
n. Population, Resources, and Environments	0002 Historical and contemporary contexts of the study of physics  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
o. Population Growth	0002 Historical and contemporary contexts of the study of physics  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
p. Natural Hazards	0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
q. Natural Resources	0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
r. Risk and Benefits	0001 Connections among science, mathematics, and technology  0002 Historical and contemporary contexts of the study of physics  0003 The process of scientific inquiry and experimentation  0021 Characteristics and production of electromagnetic waves  0026 Types, characteristics, and applications of nuclear reactions,

	and methods of initiating and controlling them
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s. Environmental Quality	0002 Historical and contemporary contexts of the study of physics  0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
t. Natural and Human Induced Hazards	0002 Historical and contemporary contexts of the study of physics  0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection  0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them
u. Science and Technology in Society	0002 Historical and contemporary contexts of the study of physics  0003 The process of scientific inquiry and experimentation  0015 Components and properties of direct current circuits  0016 Magnetic fields and electromagnetic induction  0017 Alternating currents and the operation of conductors, semiconductors, and superconductors  0019 Principles of wave reflection, refraction, diffraction, interference, polarization, dispersion, and the Doppler effect  0021 Characteristics and production of

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	<p>electromagnetic waves</p> <p>0022 Principles and applications of lenses and mirrors</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
<p>v. Science and Technology in Local, National, and Global Challenges</p>	<p>0002 Historical and contemporary contexts of the study of physics</p> <p>0003 The process of scientific inquiry and experimentation</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
<p><b>Physics</b></p>	
<p>a. Properties and Changes of Properties in Matter</p>	<p>0011 Dynamics of rotational motion and the properties of fluids</p> <p>0013 The kinetic-molecular theory and its relationship to thermodynamics</p> <p>0023 The photoelectric effect, quantum theory, and the dual nature of light and matter</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p> <p>0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection</p>
<p>b. Motion and Force</p>	<p>0006 Concepts of motion in one and two dimensions, solving of problems related to motion</p> <p>0007 Characteristics of forces, methods of measuring force, and solving problems involving force</p>

Oklahoma Subject Matter Competencies	CEOE Competencies
	<p>0008 The laws of motion, including relativity</p> <p>0009 Uniform circular and simple harmonic motion</p> <p>0010 Concepts of energy, work, and power, and principles of conservation of energy and momentum</p> <p>0011 Dynamics of rotational motion and the properties of fluids</p> <p>0014 Electric charge, electric fields, electric potential, and capacitance</p> <p>0016 Magnetic fields and electromagnetic induction</p> <p>0018 Waves and problems involving wave motion</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p>
c. Transfer of Energy	<p>0010 Concepts of energy, work, and power, and principles of conservation of energy and momentum</p> <p>0012 Concept of heat energy and the laws of thermodynamics</p> <p>0014 Electric charge, electric fields, electric potential, and capacitance</p> <p>0016 Magnetic fields and electromagnetic induction</p> <p>0018 Waves and problems involving wave motion</p> <p>0020 Characteristics of sound waves and their production and transmission</p> <p>0021 Characteristics and production of</p>

Oklahoma Subject Matter Competencies	CEOE Competencies
	<p>electromagnetic waves</p> <p>0023 The photoelectric effect, quantum theory, and the dual nature of light and matter</p> <p>0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
d. The Structure of Atoms	<p>0023 The photoelectric effect, quantum theory, and the dual nature of light and matter</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p> <p>0025 Principles of radioactivity, types and characteristics of radiation, radioactive decay and its detection</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
e. Structure and Properties of Matter	<p>0013 The kinetic-molecular theory and its relationship to thermodynamics</p> <p>0017 Alternating currents and the operation of conductors, semiconductors, and superconductors</p> <p>0022 Principles and applications of lenses and mirrors</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p> <p>0025 Principles of radioactivity, types and characteristics of radiation,</p>

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	<p>radioactive decay and its detection</p> <p>0026 Types, characteristics, and applications of nuclear reactions, and methods of initiating and controlling them</p>
f. Chemical Reactions	<p>0012 Concept of heat energy and the laws of thermodynamics</p> <p>0024 Physical models of atomic structure and the nature of elementary particles</p>

NCATE Curriculum Guidelines	CEOE Competencies
g. Conservation of Energy	<p>0007 Characteristics of forces, methods of measuring force, and solving problems involving force</p> <p>0008 The laws of motion, including relativity</p> <p>0009 Uniform circular and simple harmonic motion</p> <p>0010 Concepts of energy, work, and power, and principles of conservation of energy and momentum</p> <p>0018 Waves and problems involving wave motion</p>