



Course Competency Report by Code

Code: C297

Physics: Content Knowledge (C297)

Course of Study: C297 - Physics: Content Knowledge

Course Level: Undergraduate

Course Division: Senior

Discipline: Physics

Course Type:

Department: Education

COMPETENCY #	COMPETENCY NAME	COMPETENCY TEXT
207.1.3	Newton's Laws of Motion	The graduate applies Newton's laws of motion to solve problems involving force.
207.1.2	Describing Motion	The graduate applies vector mathematics to solve motion problems.
207.1.4	Gravitation	The graduate applies the law of gravitation and Kepler's laws to solve problems.
207.1.5	Work and Energy	The graduate applies concepts of work and energy to solve problems.
207.1.6	Momentum	The graduate applies concepts of momentum and impulse to solve problems.
207.1.7	Rotational Motion	The graduate applies concepts of rotational motion to solve problems involving torque.
207.1.9	Fluids	The graduate applies concepts of static and dynamic fluids to solves problems.
207.1.10	Oscillations	The graduate applies concepts of periodic motion to solve problems.
207.2.1	Mechanical Waves	The graduate applies models of wave motion to solve mechanical wave problems, including sound waves.
207.2.3	Thermal Properties	The graduate applies concepts of temperature and heat to analyze microscopic and macroscopic properties of matter.
207.2.5	Thermodynamics	The graduate applies concepts of thermodynamics to solve problems.
207.2.6	Nature of Light	The graduate applies models of light to solve problems and describe the behavior of light.



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207.2.7	Geometric Optics	The graduate applies the ray model of light to demonstrate how mirrors and lenses are used in optical instruments.
207.2.8	Physical Optics	The graduate applies the wave model of light to demonstrate interference, diffraction, and applications of physical optics.
207.3.1	Electric Field	The graduate applies concepts of electric fields and Gauss's law to solve problems.
207.3.2	Electric Potential and Current	The graduate applies concepts of electric potential, capacitance, and electric current to solve problems and analyze electric circuits.
207.3.3	Magnetism	The graduate applies concepts of magnetism and magnetic fields to solve problems.
207.3.4	Electromagnetic Induction	The graduate applies principles of electromagnetic induction to demonstrate generators and transformers.
207.3.5	Electromagnetic Waves	The graduate demonstrates an understanding of electromagnetic waves and the electromagnetic spectrum.
207.4.2	Particle Nature of Light	The graduate analyzes experiments and models to demonstrate the particle nature of light.
207.4.4	Special Theory of Relativity	The graduate uses the special theory of relativity to solve problems in modern physics.
207.4.8	Nuclear Physics	The graduate analyzes the structure and behavior of the nucleus and applications of radioactivity and nuclear reactions.