Conceptual Understanding of Physics

Students will demonstrate a basic conceptual understanding of modern physics, which include special relativity, wave-particle duality, properties of quantum mechanical wavefunctions, and the limitations of classical physics.

Numerical Problem Solving

Students will apply their numerical and computational skills to solve problems involving electromagnetism, waves, optics, and spectroscopy.

Experimental Techniques/Student Research

Students will perform an advanced experimental project and demonstrate an understanding of the essential tools of data analysis, which includes distinguishing between statistical and systematic errors, detecting propagating errors, and representing data graphically.