

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE
ACADEMIC AFFAIRS

Course Number: LEO-100

Department: Laser Electro-Optics Technology

Course Title: Lab and Laser Safety

Semester: Fall

Year: 2017

Objectives/Competencies

Course Objective	Competencies
<p>1. Demonstrate an understanding of basic electrical and safety hazards in the lab and workplace according to the National Institute for Occupational Safety and Health (NIOSH) Guide to Electrical Safety and Health for the Electrical Trades</p>	<ul style="list-style-type: none"> • Identify, evaluate, and control electrical hazards. • Describe the dangers and causes of electrical shock. • Discuss the effects of electric current on the body. • Describe actions taken if a co-worker is shocked or burned by electricity • Explain general laboratory and workplace safety procedures. • Explain how to create a safe work environment • Describe lock out and tag out circuits and equipment • Identify and describe inadequate wiring hazards • Describe hazards of exposed live electrical components • Explain the operation and use of GFCIs • Describe the safe use of ladders, safety helmets, and other related personal protective equipment
<p>2. Demonstrate an understanding of the basic laser safety principles and practices according to ANSI Z136.1</p>	<ul style="list-style-type: none"> • Describe the different classifications of lasers. • Discuss laser safety standards and hazard classifications. • Discuss laser hazards, eye hazards and skin hazards • Explain laser safety procedures for each laser classification • Calculate laser beam irradiance and fluence • Determine Maximum Permissible Exposure (MPE) values • Determine the nominal hazard zone for a given laser system • Calculate required optical density or laser eye protection