UNC CHARLOTTE
Department of Engineering Technology

LABORATORY SAFETY ANALYSIS

6-8 FOOT STEP LADDER

Location: Various within laboratories

Required Training: Ladders are designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of a ladder, do not use until proper training and knowledge have been obtained.

Required Personal Protective Equipment (PPE): Slip resistant even sole, closed-toe, sturdy and clean proper footwear. Recommended – Safety glasses/goggles based on job task

Reference Materials: Manufacturer's safety rules

PHOTOS	TASK	HAZARDS	CONTROLS
 	Wear proper footwear and other personal protective equipment (PPE) needed for specific task.	Struck by injury	• Ensure slip resistant closed toed, even sole, clean and sturdy shoes are worn.
	Visually/Manually Select a Ladder	Falling, injury	• Visually review the ladders for style, size, duty rating and materials. Portable step ladders are usually recommended when you need a reach of two to eight feet. • Select ladder that is the right size or length. A ladder that is generally long enough when it provides access to work area without necessitating standing on the top two steps of a step ladder. • Ladders selected must be sufficient for the weight of the operator plus the weight of any tools and materials. • Review the duty rating on the side of the ladder. Fiberglass has become the best choice material for ladders. • Do not use a metal ladder when working on or near electrical equipment.
	Transporting a ladder by lifting and carrying.	Muscle Strain Injuries to self and others from losing control of ladder. Property damage	• Use proper lifting technique: Ask for help if the ladder is too heavy or over 6 feet in length. • Bend at the knees and lift ladder with your leg muscles instead of your back muscles. Limit turning and twisting motions while carrying the ladder. This may cause a back injury. • Maintain control of ladder by firmly gripping

			the ladder. • Devote constant attention to the area traveled to avoid striking property or other people. • Always carry step ladders in the closed position.
	Visually/Manually Inspect Ladder before use	Lacerations, muscle strain	• Check the stability of the ladder. (Ex. Will it rock from side to side or is it secure). • Check joints between step and side rails in insure they are tight. • Insure that rungs are clean and free of grease and oil. • Check for loose, bent hinge or broken rungs. • Report any defects immediately to laboratory instructor or laboratory manager.
	Setting up the ladder	Injuries to self and others	• Barricades and warning signs should be posted when ladders are placed near doors or other locations where they could be struck. • Never place ladders on boxes, barrels, or other unstable bases for additional height. • Ladders must be placed on level surfaces. • Make sure that ladders are not blocking doorways and emergency routes. • Never use a step ladder on slippery surfaces. • Ensure the ladder is opened fully and ladder locks, spreaders or braces are engaged before climbing. • Never use a step ladder over 20 feet in length.
		Potential electrocution	• Metal ladders are not used near electrical lines.
	Climbing up ladder	Falling, injury	• Maintain three points of contact while on the ladder. • Do not over-reach, jump or slide a ladder while on it. • Always face the ladder and use both hands while ascending and/or descending. • Tools or materials should be raised by means of a rope after the climber has reached the working position. • Carrying heavy loads up or down ladders is prohibited. • Ladders should not be used by more than one person at a time unless they are designed for such use. • Do not lean sideways out of the ladder's width. • Always wear proper footwear; closed-toe, sturdy, and clean.
	Perform job task	Falling	• Devote your individual attention to the work being performed.

	Climbing down the ladder	Falling, injury	• Maintain three points of contact while on the ladder. • Do not over-reach, jump or slide a ladder while on it. • Always face the ladder and use both hands while ascending and/or descending. • Do not lean sideways out of the ladder's width. • Always wear proper footwear; closed-toe, sturdy, and clean.
	Removing ladder, barricades and other equipment.	Injuries to self and others from losing control of ladder, Property damage	• Maintain control of the ladder by firmly gripping the ladder. • Devote constant attention to the area traveled to avoid striking property or other people. • Never leave tools or materials on the top of a step ladder.
	Clean work area and return all PPE to a clean storage area.	Injury	• Ensure adequate housekeeping measures to prevent accidents.
	Storing ladder	Injuries to self and others by ladder falling	• Ladders should be stored in a designated storage area.
For more information about this LSA, contact the *Department of Engineering Technology* at UNC Charlotte (704) 687-2305 Please visit our website at: http://www.et.uncc.edu\			
The development of Laboratory Safety Analyses is a very effective means of helping reduce incidents, accidents, and injuries in the workplace. It is an excellent tool to use for training purposes and can also be used to investigate "near misses" and accidents.			