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## Introduction to Safety – Unit Six: Tool Safety

### *Lab Exercise 1: Power Tool Safety*

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#### Introduction

There are various types of tools that are used to perform jobs at work or at home. One category are tools called hand tool, which require the user's muscles to operate them. There are also various power tools that use various energy sources, such as electricity, pneumatics and hydraulics to run them. Using a power source other than one's muscles make it easier to perform many tasks. For example, an electric saw takes a few seconds to cut through the same board that would take several minutes to cut with a handsaw.

Power tools can be very dangerous and can cause serious harm or loss of limb when using them due to accidents. However, when safeguards and proper procedures are followed, they are relatively safe. The safe and proper operation of power equipment can be learned from schooled training, from a mentor, by reading manuals, or by viewing appropriate videos from the manufacturer, or on the Internet. In this lab activity, the student will perform an operation on a power tool of their choice.

#### Equipment

- Power tool
- Video recorder

#### Objective

The student will demonstrate how to operate a power tool properly and safely.

#### Lab Activity

After attending a lecture or completing the reading assignment on power tools, the following activities should be performed:

- Select a power tool on which to give a demonstration on its operation.
- Research how to use the tool properly and safely. This information can be obtained from a manual or a video produced by the equipment manufacturer; from viewing a YouTube video; from a demonstration by an expert; from your personal knowledge and experience.
- After preparing and rehearsing a demonstration, record a video on the equipment that is approximately 5 minutes in length. While going through each step, explain the proper and safe operation of the power tool. This video and narration can be done on a smart device, such as a cell phone or tablet.
- Make an appointment to show your instructor the video.





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#### Grading Rubric

Below is an example of a rubric to implement when evaluating the performance of individual students for each of the laboratory exercises.

|                                       | Excellent<br>5 pts  | Good<br>4 pts   | Fair<br>3 pts   | Poor<br>2 pts   | Unacceptable<br>1 pts   | Grade<br>Received<br>(N/A) |
|---------------------------------------|---|---|---|---|---|----------------------------|
| <b>Ability to Follow Directions</b>   | Excellent<br><br>Followed directions to the letter.   | Good<br><br>Followed directions.  | Fair<br><br>Moderately followed directions.                                     | Poor<br><br>Did not follow directions.                                    | Unacceptable<br><br>Did not appear concerned with directions.                 | Grade Received             |
| <b>Demonstrate Knowledge of Tools</b> | Excellent<br><br>Student knows and is able to identify and explain necessary tools for completion of the project. | Good<br><br>Student is able to identify and explain necessary tools for completion of the project with some assistance. | Fair<br><br>Student is unable to identify or use tools without major prompting. | Poor<br><br>Student is not able to both identify and use tools.           | Unacceptable<br><br>Student's use of tools posed a danger to self and others. | Grade Received             |
| <b>Level of Needed Assistance</b>     | Excellent<br><br>Student was able to complete the task without assistance.  | Good<br><br>Student was able to complete the task with little assistance.   | Fair<br><br>Student was able to complete the task with moderate assistance.     | Poor<br><br>Student was unable to complete task without major assistance. | Unacceptable<br><br>Student was unable to complete task with assistance.      | Grade Received             |





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|                             | <b>Excellent<br/>5 pts</b>  | <b>Good<br/>4 pts</b>   | <b>Fair<br/>3 pts</b>   | <b>Poor<br/>2 pts</b>   | <b>Unacceptable<br/>1 pts</b>  | <b>Grade<br/>Received<br/>(N/A)</b> |
|-----------------------------|---|---|---|---|--|-------------------------------------|
| <b>Student Preparedness</b> | Excellent<br><br>Student had/gathered all materials and was completely ready to go to work.   | Good<br><br>Student had/gathered most materials and went to work. | Fair<br><br>Student had/gathered most materials, however, they needed excess time to do so. | Poor<br><br>Student did not have/gather some of the needed materials to perform work. | Unacceptable<br><br>Student did not have/gather the needed materials and was unable to perform work. | Grade Received                      |
| <b>Time Management</b>      | Excellent<br><br>Routinely used time well throughout the project to get the job done on time. | Good<br><br>Used time fairly well throughout the project.         | Fair<br><br>Procrastinated somewhat but did get the job done on time.                       | Poor<br><br>Was unable to adequately meet timeline due to inability.                  | Unacceptable<br><br>Did not meet timeline due to procrastination or wasting time.                    | Grade Received                      |





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