**Risk Assessment**

**Safety Plan**

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| Project information: | | | | | | |
| Simulated Assembly Line and Processing Workstation | | | | |  | 02/28/2019 |
| Name of Project | | | | |  | Date of submission |
| Team Member |  | Phone Number |  | e-mail | | |
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| I. Project description: | | | | | | |
| The project will consist of building a manufacturing machine that will be able to detect different objects based on material and | | | | | | |
| size. The objects will be placed in their proper bins after flowing through the process line. Tallahassee Community College will | | | | | | |
| use this project to teach their Advanced Manufacturing students the concept of the integration of mechanical and electrical | | | | | | |
| components in a factory style setting. | | | | | | |
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| II. Describe the steps for your project: | | | | | | |
| One item at a time will be placed on the first conveyor belt. Once placed the capacitive and photoelectric sensors will detect if | | | | | | |
| an object is present, as well as size and material. The diverter arm attached to the stepper motor will then guide the objects into | | | | | | |
| the correct position based off the received sensor information. | | | | | | |
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| III. Given that many accidents result from an unexpected reaction or event, go back through the steps of the project and imagine what could go wrong to make what seems to be a safe and well-regulated process turn into one that could result in an accident. (See examples) | | | | | | |
| * Plugging the conveyor belt in could cause electric sparks if there is overheating, short circuits, or water damage | | | | | | |
| * Heavy objects placed on the conveyor belt falling to floor causing an injury due to poorly designed guard rails | | | | | | |
| * Long hair or loose article of clothing being caught onto the belts, or diverter arm causing injury to those standing by or working | | | | | | |
| with the equipment | | | | | | |
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| IV. Perform online research to identify any accidents that have occurred using your materials, equipment or process. State how you could avoid having this hazardous situation arise in your project. | | | | | | |
| Position viewers and workers of the conveyor belt so they are not hit by objects moving down the conveyor belt, or from objects | | | | | | |
| falling off the side of the belts. Reducing the speed of the conveyor belt will ensure objects will travel with safe speeds to not | | | | | | |
| cause falls. Keeping hair and loose clothing away the belts while in use will be able to avoid unwanted contact with the belts. | | | | | | |
| Group members will ensure to guard the pinch points between the conveyor belts and fixed items. | | | | | | |
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| V. For each identified hazard or “what if” situation noted above, describe one or more measures that will be taken to mitigate the hazard. (See examples of engineering controls, administrative controls, special work practices and PPE). | | | | | | |
| * Ensure plug outlets are safe to use, with no damages or shortages | | | | | | |
| * Ensure all group members are familiar with the location of the emergency switch on both conveyor belts | | | | | | |
| * Check all railings and pitch points before the turning on of each conveyor belt | | | | | | |
| * Ensure bins are heavy enough to store the object after flowing through the system | | | | | | |
| * Make the bins sturdy enough to rule out detachment from conveyor belts | | | | | | |
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| **VI. Rewrite the project steps to include all safety measures taken for each step or combination of steps. Be specific (don’t just state “be careful”).** | | | | | | |
| Check the outlet source before plugging in conveyor belts. Locate the whereabouts of the emergency switch before turning on | | | | | | |
| either belts. Check the tightness of the railings and the belt material for any cuts or damages. Place item one item at a time and | | | | | | |
| turn on conveyor belts. Once placed allow the objects to flow through the capacitive and photoelectric sensors as the sensors | | | | | | |
| will detect if an object is present, as well as size and material. The diverter arm attached to the stepper motor will then guide the | | | | | | |
| objects into the correct position based off the received sensor information. Once project is done turn off conveyor belts in correct | | | | | | |
| form. | | | | | | |
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| **VII. Thinking about the accidents that have occurred or that you have identified as a risk, describe emergency response procedures to use.** | | | | | | |
| During any accident with the conveyor belts locate the emergency stop button. If there are any harm onto peers find nearest | | | | | | |
| first-aid kit. Call for emergency, or trained individuals, to help assist those who are harmed. | | | | | | |
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| VIII. List emergency response contact information: | | | | | | |
| * Call 911 for injuries, fires or other emergency situations * Call your department representative to report a facility concern | | | | | | |
| Name |  | Phone Number |  | Faculty or other COE emergency contact |  | Phone Number |
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| IX. Safety review signatures | | | | | | |
| * Faculty Review update (required for project changes and as specified by faculty mentor) * Updated safety reviews should occur for the following reasons:  1. Faculty requires second review by this date: 2. Faculty requires discussion and possibly a new safety review BEFORE proceeding with step(s) 3. An accident or unexpected event has occurred (these must be reported to the faculty, who will decide if a new safety review should be performed. 4. Changes have been made to the project. | | | | | | |
| Team Member |  | Date |  | Faculty mentor |  |  |
| David DiMaggio |  | 02/28 |  | Dr. McConomy |  |  |
| Cheyenne Laurel |  | 02/28 |  | Dr. McConomy |  |  |
| Boluwatife Olabiran |  | 02/28 |  | Dr. McConomy |  |  |
| Nataajah Taylor |  | 02/28 |  | Dr. Hooker |  |  |
| JoEll Williams |  | 02/28 |  | Dr. Hooker |  |  |
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**Report all accidents and near misses to faculty mentor.**