

February 13, 2013

Safety Protocols for Faculty of Engineering Student Shop Facilities

In the interests of Safety, the following protocols will be followed for students requesting access to shop facilities in the Faculty of Engineering. The shops covered under this protocol are Machine Shop in CMLP 54, the Student Project Room in CMLP 63, the wood shop in CMLP 63A, the student team workshops in CMLP 63E and CMLP 67A, the Department of Mechanical and Materials Engineering Shop in SEB 1071 and the CNC Machine lab in SEB 37A.

Personal Protective Equipment

All Shops

- Safety Glasses, Long Pants, closed toe shoes (no sandals or flip flops) are the minimum requirements to work in any of the shops.

CMLP 54

- In addition to the requirements for all shops, safety shoes or steel toe caps are required, long hair must be tied back, any loose jewelry such as necklaces, bracelets must be removed. Loose fitting clothing that could be caught in rotating machinery must not be worn.

CMLP 63A, SEB 1071, SEB 37A

- In addition to the requirements for all shops, long hair must be tied back, any loose jewelry such as necklaces, bracelets must be removed. Loose fitting clothing that could be caught in rotating machinery must not be worn.

Training

- **Basic Training** - is required by anyone accessing any shop for non-work related tasks like meetings. This training covers emergency protocols only. This training does not cover the use of any tools. This training is intended only for Mega project team support members such as managers, marketing, etc. For students who will be in the space but not performing work.
- **Introduction to Wood and Metal shop** - Training is required before access to any shops will be granted. This training covers the use of basic hand tools as well as basic stationary power tools: band saws, drill presses, sanders and grinding machines.
- **Advanced metal shop training Level 1 &2** - A basic introduction to the functions, operations, limitations, care and use of machine shop tools such as a milling machines or lathes. Two, two hour lectures. After the lectures students should possess knowledge to begin filling out a "Machine Tool Use Process Sheet" explaining the part they wish to make and processes involved. This will be required any time a student wishes to use the machine

tools. The sheets are used as a guide to ensure adequate further training. Onsite supervision by a technician is required for machine tool use. Once a student has proven proficiency in operations in machine shop operations, access can be granted more freely. Proficiency will be verified by a member of UMS against a "Machine Shop Proficiency Journal" checklist which lays out the minimum knowledge and standards that must be met. In addition the technician who has provided the training must be satisfied that the student can perform the required machining operations safely.

- **Welding training - Health and Safety Presentation** - A basic introduction to the functions, limitations, of ARC Welding Equipment. A one hour presentation outlining the hazards and dangers associated with welding and its byproducts. After the lecture students should possess knowledge to begin filling out a "Welding Machine Use Process Sheet" explaining the functions they wish to perform. Based on the information provided, students will receive further one on one instruction to help them perform the welds they wish to learn. This form will be required any time a student wishes to use the welders such as MIG or TIG. Supervision is required to set-up the welding machines and get students started. Once a student has proven proficiency in operations of Welding, access can be granted more freely. Proficiency will be verified by a member of UMS against a "Machine Shop Proficiency Journal" checklist which lays out the minimum knowledge and standards that must be met. In addition the technician who has provided the training must be satisfied that the student can perform the required welding operations safely.
- Training is provided by Chris Vandelaar
- Required Training is laid out by room below:

CMLP 54

1. **REQUIRED - Introduction to Wood and Metal Shop Training** (use of basic stationary power tools) drill presses, band saws, sanders/grinders as well as hand tools, PPE requirements, Emergency Procedures and locations of Emergency equipment, exits and fire alarm pull stations.
2. **Optional**- Advanced level training for the use of machine tools and Welding machines.
3. **Optional** - Throughout CMLP 54 and 63 there are other various tools such as sheet metal equipment and presses. Individual training for these is available upon request. I.e: Arbour Press, Hydraulic Press, sheet metal and Beverley shear and Box and Pan Sheet Metal Brake.

CMLP 63, 63E AND 67A

1. **REQUIRED** - Basic Shop Safety such as: use of hand tools, PPE requirements, Emergency Procedures and locations of Emergency equipment, exits and fire alarm pull stations.

CMLP 63A

1. **REQUIRED - Introduction to Wood and Metal Shop Safety.** Covers use of stationary power tools such as: Drill press, Horizontal and Vertical Bandsaw (metal and wood), Sanders (Metal and Wood),
2. **Optional- Sliding Compound Mitre Saw Training** (required if this tool is to be used)

SEB 1071

1. **REQUIRED - Introduction to Wood and Metal Shop Training.** Covers use of stationary power tools such as: Drill press, Horizontal and Vertical Bandsaw (metal and wood), Sanders (Metal and Wood), Arbour Press, Hydraulic Press.

SEB 37A

1. **REQUIRED – Introduction to Wood and Metal Shop Training**(use of basic stationary power tools) drill presses, band saws, sanders/grinders as well as hand tools, PPE requirements, Emergency Procedures and locations of Emergency equipment, exits and fire alarm pull stations.
2. **REQUIRED – Advanced level training for the use of machine tools.**

ACCESS

CMLP 54

- Access is controlled VIA card access. When the required training has been completed. Chris Vandelaar will setup the users card access. Access to this space is restricted to the hours of 8:00am to 4:00pm for student projects and 8:00am to 10:00pm Monday to Friday for student teams.
- Access to the machine tools (lathes and mills) is restricted to those who have completed the applicable training, and have filled out the process work sheets for the intended work, and the worksheet has been reviewed and signed off by Chris Vandelaar or another designated staff member of University Machine Services. Access is controlled via card access. Supervision is required for all machine tool use. Access may be granted more freely once students have proven proficiency in the use of these tools.
- Fore after hours access, there must be two persons in the shop at all times.

CMLP 63, 63A, 63E, 67A

- Access to these room s is controlled by keypad. The keypad codes will be changed on a regular basis(minimum at the end of each academic year). The access codes will be given to those who have completed the required training for the space requested. Access to this space is restricted to the hours of 8:00am to 4:00pm for student projects and 8:00am to 10:00pm Monday to Friday for student teams.
- Fore after hours access, there must be two persons in the shop at all times.

- It is recommended that Card access control be installed on these areas.

SEB 1071

- Access to this room is controlled by keypad. The keypad code will be changed on a regular basis (minimum at the end of each academic year). The access code will be given to those who have completed the required training. Access to this shop is restricted to the hours of 8:30am to 4:30pm. At least one MME technical staff member must be onsite for the shop to be open. At peak times, hours may be extended to 8:30am to 10pm as long as at least one MME technical staff are onsite. Onsite means that at least one of the MME technical staff are in their office, or in the area of the machine shop where they are available for students in the shop and will perform regular walk thru's of the shop.

SEB 37A

- Access to SEB 37A is controlled by keypad. This is a research space and as such access must be granted by the PI once all training requirements have been met.

Monitoring

All Shops

- Activity in all CMLP shops will be monitored by staff of University Machine Services who will perform regular walk throughs during regular business hours. During peak times, Chris Vandelaar will work out of his CMLP office in 63C. For after hours access, there must be two persons in the shop at all times.
- Activity in SEB 1071 will be monitored by MME technical staff who will perform regular walk throughs during the day.

CMLP 54

- In addition to the above, CMLP 54 will be monitored by Video surveillance on a 24 hour basis.

SEB 37A

- This is a research space and activity in this lab will be monitored by the P.I.

EMERGENCY PROCEDURES

All Shops

- **Medical Emergency** – Dial 911 from any campus phone (including payphone) to get campus police who will dispatch SERT and Police/Fire/Ambulance as required.

- If you Dial 911 from a cellular phone, you will get the city of London 911 dispatch. Tell them you are at UWO and they will connect you to campus police.
- **Fire** - Immediately pull the nearest fire alarm pull station. Then, if it is safe to do so, attempt to extinguish fire with the nearest fire extinguisher. Evacuate the building and meet emergency crews at the front doors of CMLP to provide information.
- **Chemical spill**- If you can do so safely, clean up spill using one of the chemical spill kits located in CMLP and SEB. There is one kit located on each floor of each building. If you cannot clean up the spill safely, Dial 911 from any campus phone to get campus police who will dispatch the UWO HazMat Team.

In any emergency remember that your safety is most important!!!