

Machine Maintenance

Course Outcome Summary

Course Information

Organization	Madison Area Technical College
Developers	John Stephany
Development Date	3/13/2009
Course Number	31-410-336
Instructional Level	One-Year Technical Diploma
Instructional Area	Construction and Remodeling
Division	Construction, Manufacturing, Apprentice, Transport
Potential Hours of Instruction	36
Total Credits	1

Description

Proper maintenance is essential in order to obtain accurate and repeatable results. This course focuses on keeping machinery in proper working order and maintaining sharp cutting tools. Students learn to troubleshoot problems and to establish routine maintenance procedures.

Types of Instruction

Instruction Type	Contact Hours	Credits
A. Classroom Presentation	9	1
B. On Campus Laboratory and Clinicals	27	

Learner Supplies

safety glasses.
3-ring binder.

Exit Learning Outcomes

Core Abilities

A. Critical thinking

External Standards

Competencies

Unit 1. Hand Tools and Sharpening

A. Identify 3 main hand tool categories and tools

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

A.1. By written test

Your performance will be successful when:

A.1. you identify all tools within their categories

B. Demonstrate basic hand tool maintenance techniques

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

B.1. By written test

B.2. In lab

Your performance will be successful when:

B.1. you identify and correctly complete the maintenance technique for each tool

C. Identify methods for sharpening tools

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

C.1. By written test

Your performance will be successful when:

C.1. you identify 3 common methods for sharpening

D. Sharpen chisels/planes by hand

You will demonstrate your competence:

D.1. In the lab

Your performance will be successful when:

D.1. you sharpen a chisel or plane blade

D.2. Chisel or blade is sharp enough to shave hair

E. Sharpen chisels/planes using a Tormek Sharpening System

You will demonstrate your competence:

E.1. In the lab

Your performance will be successful when:

E.1. you follow procedures for setting up the Tormek

E.2. you dress the wheel if it is not smooth and true

E.3. you follow procedures for shutting down the Tormek

Unit 2. Portable Power Tools

A. Identify Parts and Terminology of Portable Electric motors

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

A.1. By written test

A.2. In the lab

Your performance will be successful when:

A.1. you identify a minimum of 80% of the parts on the test

A.2. you complete appropriate section on the portable power tools checklist

B. Check Electrical components for wear

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

B.1. In the lab

B.2. on a written test

Your performance will be successful when:

B.1. you complete the appropriate section on the portable power tools checklist

C. Lubricate moving parts

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

- C.1. In the lab
- C.2. on a written test
- C.3. by submitting the portable power tools checklist

Your performance will be successful when:

- C.1. you identify and lubricate necessary parts of assigned portable power tools as per checklist

Unit 3. Pneumatics

A. Identify Pneumatic system parts

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

- A.1. In the lab
- A.2. By written test

Your performance will be successful when:

- A.1. you identify a minimum of 80% of the parts on the test

B. Compressor maintenance and repair

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

- B.1. In the lab
- B.2. By written test

Your performance will be successful when:

- B.1. you identify critical parts of a compressor and repair/maintain them in the lab and on the test

C. Pneumatic tool maintenance and repair

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

- C.1. In the lab
- C.2. By written test

Your performance will be successful when:

- C.1. you identify critical parts of pneumatic tools and can show maintenance and repair techniques in lab and on the test

D. Cordless fuel cell nail gun maintenance

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

- D.1. In the lab
- D.2. By written test

Your performance will be successful when:

- D.1. you can demonstrate proper cleaning steps for fuel cell nail gun

Unit 4. Saws

A. Identify types of saws for construction

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

- A.1. In the lab
- A.2. By written test

Your performance will be successful when:

- A.1. you identify a minimum of 80% of the parts on the test

- B. Maintain a circular saw**
Linked Core Abilities
 Critical thinking
You will demonstrate your competence:
 B.1. In the lab
 B.2. By written test
Your performance will be successful when:
 B.1. you correctly identify and execute proper maintenance techniques in the lab and on the test
- C. Maintain a jigsaw**
Linked Core Abilities
 Critical thinking
You will demonstrate your competence:
 C.1. In the lab
 C.2. By written test
Your performance will be successful when:
 C.1. you correctly identify and execute proper maintenance technique in the lab and on the test
- D. Maintain a chopsaw**
Linked Core Abilities
 Critical thinking
You will demonstrate your competence:
 D.1. In the lab
 D.2. By written test
Your performance will be successful when:
 D.1. you correctly identify and execute proper maintenance techniques in the lab and on the test
- E. Maintain a reciprocating saw**
You will demonstrate your competence:
 E.1. In the lab
 E.2. By written test
Your performance will be successful when:
 E.1. you you correctly identify and execute proper maintenance techniques in the lab and on the test
- F. Saw Blades**
You will demonstrate your competence:
 F.1. By written test
Your performance will be successful when:
 F.1. you correctly identify and different types of sawblades and their appropriate uses on 80% of the test
- Unit 5. Drills and Finish Tools**
- A. Identify parts and adjustments of a drill**
Linked Core Abilities
 Critical thinking
You will demonstrate your competence:
 A.1. In the lab
 A.2. By written test
Your performance will be successful when:
 A.1. you identify a minimum of 80% of the parts on the test
 A.2. you complete the appropriate section on the drill checklist
- B. Identify parts and adjustments of finishing tools**
Linked Core Abilities

Critical thinking

You will demonstrate your competence:

B.1. In the lab

B.2. By written test

Your performance will be successful when:

B.1. you complete the appropriate section on the finish tools checklist

Unit 6.

Powder Actuated Tools

A. Identify parts and adjustments of a Powder actuated nail gun

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

A.1. In the lab

A.2. By written test

Your performance will be successful when:

A.1. you identify a minimum of 80% of the parts on the test

A.2. you successfully fire a PAT nailgun

B. Examine moving parts for wear and make necessary adjustments

Linked Core Abilities

Critical thinking

You will demonstrate your competence:

B.1. In the lab

B.2. By written test

Your performance will be successful when:

B.1. you successfully complete 80% of the written exam