

## Washtenaw Community College Comprehensive Report

### ABR 119 The Art of Metal Shaping Effective Term: Fall 2020

#### Course Cover

**Division:** Advanced Technologies and Public Service Careers  
**Department:** Transportation Technologies  
**Discipline:** Auto Body Repair (new)  
**Course Number:** 119  
**Org Number:** 14100  
**Full Course Title:** The Art of Metal Shaping  
**Transcript Title:** The Art of Metal Shaping  
**Is Consultation with other department(s) required:** No  
**Publish in the Following:** College Catalog , Time Schedule , Web Page  
**Reason for Submission:** Three Year Review / Assessment Report  
**Change Information:**

**Consultation with all departments affected by this course is required.**

**Total Contact Hours**

**Outcomes/Assessment**

**Objectives/Evaluation**

**Rationale:** Upon completion of the assessment, the department is requesting that the contact hours be increased from 45 to 52.5 hours. This will allow the students the time to complete the required work and have a better educational experience. We don't feel it is necessary to update the content of the master syllabus at this time; we will be able to revise the student syllabus to cover the in-lab changes that are needed.

**Proposed Start Semester:** Winter 2020

**Course Description:** This course will introduce the student to the working of sheet metals by hand. In addition to skillful handling of tools, it is necessary for the students to possess a thorough knowledge of the properties and behavior of materials in order to ensure that they move in the desired direction when worked. Areas of study will include sheet metal shaping using hand tools over wood forms, anvils, and sand/shot bags. Students will create several handmade parts using a variety of sheet metal materials with varied thickness and hardness.

#### Course Credit Hours

**Variable hours:** No

**Credits:** 2

**Lecture Hours: Instructor:** 30 **Student:** 30

**The following Lab fields are not divisible by 15: Student Min, Instructor Min**

**Lab: Instructor:** 22.5 **Student:** 22.5

**Clinical: Instructor:** 0 **Student:** 0

**Total Contact Hours: Instructor:** 52.5 **Student:** 52.5

**Repeatable for Credit:** NO

**Grading Methods:** Letter Grades

**Audit**

**Are lectures, labs, or clinicals offered as separate sections?:** NO (same sections)

#### College-Level Reading and Writing

College-level Reading & Writing

## **College-Level Math**

No Level Required

### **Requisites**

### **General Education**

### **Request Course Transfer**

**Proposed For:**

### **Student Learning Outcomes**

1. Recognize the principles and processes of shaping sheet metal by hand.

#### **Assessment 1**

Assessment Tool: Outcome-related exam questions

Assessment Date: Winter 2023

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: 70% of students will score 70% or higher

Who will score and analyze the data: Departmental faculty

2. Identify sheet metal properties and designs related to forming sheet metal by hand.

#### **Assessment 1**

Assessment Tool: Outcome-related exam questions

Assessment Date: Winter 2023

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: 70% of students will score 70% or higher

Who will score and analyze the data: Departmental faculty

3. Demonstrate the sheet metal shaping process safely.

#### **Assessment 1**

Assessment Tool: Student Achievement Record

Assessment Date: Winter 2023

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Departmentally-developed rubric

Standard of success to be used for this assessment: 70% of students will score 70% or higher

Who will score and analyze the data: Departmental faculty

### **Course Objectives**

1. Explore planned classroom activities and demonstrate the ability to apply fundamental principles of the art of sheet metal shaping.
2. Construct templates from wood for metal shaping.
3. Identify and select proper anvil shape and size for shaping application.
4. Identify and select proper sand/shot bag shapes and size for shaping application.
5. Demonstrate hammer and dolly techniques on a range of sheet metals with varied thickness and hardness.
6. Locate and reduce surface irregularities on a handcrafted sheet metal panel.

7. Demonstrate the ability to create a hand formed classic bowl shape using hand tools only.
8. Recognize and apply safety standards when performing sheet metal shaping skills.
9. Recognize the impact of sheet metal properties on the shaping process.

## New Resources for Course

### Course Textbooks/Resources

Textbooks  
Manuals  
Periodicals  
Software

### Equipment/Facilities

Level III classroom

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
<b>Faculty Preparer:</b> <i>Timothy VanSchoick</i>	<i>Faculty Preparer</i>	<i>Aug 06, 2019</i>
<b>Department Chair/Area Director:</b> <i>Justin Morningstar</i>	<i>Recommend Approval</i>	<i>Nov 14, 2019</i>
<b>Dean:</b> <i>Brandon Tucker</i>	<i>Recommend Approval</i>	<i>Dec 10, 2019</i>
<b>Curriculum Committee Chair:</b> <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Feb 19, 2020</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Feb 24, 2020</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Feb 25, 2020</i>

MASTER SYLLABUS

Course Discipline Code & No: ABR 119 Title: The Art of Metal Shaping Effective Term Fall 07  
 Division Code: VCT Department Code: ABR Org #: 14110  
 Don't publish:  College Catalog  Time Schedule  Web Page

Reason for Submission. Check all that apply.  
 New course approval  Reactivation of inactive course  
 Three-year syllabus review/Assessment report  Inactivation (Submit this page only.)  
 Course change

Change information: Note all changes that are being made. Form applies only to changes noted.

Consultation with all departments affected by this course is required.  Total Contact Hours (total contact hours were: \_\_\_\_\_)  
 Course discipline code & number (was \_\_\_\_\_)\*  Distribution of contact hours (contact hours were:  
 \*Must submit inactivation form for previous course. lecture: \_\_\_\_\_ lab \_\_\_\_\_ clinical \_\_\_\_\_ other \_\_\_\_\_)  
 Course title (was \_\_\_\_\_)  Pre-requisite, co-requisite, or enrollment restrictions  
 Course description  Change in Grading Method  
 Course objectives (minor changes)  Outcomes/Assessment  
 Credit hours (credits were: \_\_\_\_\_)  Objectives/Evaluation  
 Other \_\_\_\_\_

Rationale for course or course change. Attach course assessment report for existing courses that are being changed.  
 Providing training for the most highly skilled form of craftsmanship, working sheet metals by hand. Essentially, panel-beating is a hand method of producing hollow forms by means of hammering. Together with forging it is probably the most ancient of the metal-working crafts. Completers of program will develop skills associated with prototype fabrication and collision repair.

Approvals Department and divisional signatures indicate that all departments affected by the course have been consulted.

**Department Review by Chairperson**  New resources needed  All relevant departments consulted

Print: W. Gary Sobbry, Jr. Signature W. Gary Sobbry Jr Date: 1-22-08  
 Faculty/Preparer  
 Print: W. Gary Sobbry, Jr. Signature W. Gary Sobbry Jr Date: 1-22-08  
 Department Chair

**Division Review by Dean**  
 Request for conditional approval  
 Recommendation  Yes  No [Signature] Date 1-22-08  
 Dean's/Administrator's Signature

**Curriculum Committee Review**  
 Recommendation  Tabled  Yes  No [Signature] Date 3/4/08  
 Curriculum Committee Chair's Signature

**Vice President for Instruction Approval**  
[Signature] Date 3/11/08  
 Vice President's Signature

Approval  Yes  No  Conditional

Do not write in shaded area.  
 Log File 1/23/08 sj Copy  Banner 3/19 C&A Database 3/19 C&A Log File 3/19 Basic skills  Contact fee   
 Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to [sjohn@wccnet.edu](mailto:sjohn@wccnet.edu) for posting on the website.



<b>Course</b> ABR 119	<b>Course title</b> The Art of Metal Shaping
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<b>Course description</b> State the purpose and content of the course. Please limit to <u>500</u> characters.	This course will introduce the student to “the working of sheet metals by hand.” In addition to skillful handling of tools, it is necessary for the students to possess a thorough knowledge of the properties and behavior of materials in order to insure that they move in the desired direction when worked. Areas of study will include: Sheet metal shaping with hand tools over handcrafted wood forms, over anvils, and over sand/shot bags and fabricating hand-made parts using a range of sheet metal materials with varied thickness and hardness.
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<b>Course outcomes</b> List skills and knowledge students will have after taking the course.  <b>Assessment method</b> Indicate how student achievement in each outcome will be assessed to determine student achievement for purposes of course improvement.	<b>Outcomes</b> (applicable in all sections)	<b>Assessment</b> Methods for determining course effectiveness
	<ol style="list-style-type: none"> <li>1. Identify and demonstrate principles of sheet metal shaping by hand.</li> <li>2. Analyze sheet metal properties and shapes in addition to shaping process</li> <li>3. Perform sheet metal shaping process in accordance w/safety standards as instructed.</li> </ol>	<p>Mid Term and Final Exam, Student Achievement Record</p> <p>Student Achievement Record, Mid Term and Final exams.</p> <p>Student Achievement Record.</p>

<b>Course Objectives</b> Indicate the objectives that support the course outcomes given above.  <b>Course Evaluations</b> Indicate how instructors will determine the degree to which each objective is met for each student.	<b>Objectives</b> (applicable in all sections)	<b>Evaluation</b> Methods for determining level of student performance of objectives
	<ol style="list-style-type: none"> <li>1. Explore planned classroom activities and demonstrate the ability to apply fundamental principles of the art of sheet metal shaping.</li> <li>2. Construct templates from wood for metal shaping.</li> <li>3. Identify and select proper anvil shape and size for shaping application.</li> <li>4. Identify and select proper sand/shot bag shapes and size for shaping application.</li> <li>5. Demonstrate hammer and dolly techniques on a range of sheet metals with varied thickness and hardness.</li> <li>6. Locate and reduce surface irregularities on a hand crafted sheet metal panel.</li> <li>7. Demonstrate the ability to create a hand formed classic bowl shape by using hand tools only.</li> </ol>	<p>Student Achievement Record, Chapter test, Mid term and Final exams.</p> <p>Student Achievement Record</p> <p>Chapter test and Student Achievement Record</p> <p>Chapter test and Student Achievement Record</p> <p>Student Achievement Record</p> <p>Student Achievement Record</p> <p>Student Achievement Record and Final Exam</p>

**List all new resources needed for course, including library materials.** Small hand tools: Hammers, dollies, files, shot bags, clamps, hammer forming materials and small sheet metal break 12 to 14 inches.

**Student Materials:**

<p><b>List examples of types</b>                  Texts                  Supplemental reading                  Supplies                  Uniforms                  Equipment                  Tools                  Software</p>		<p><b>Estimated costs</b>                  \$ 0</p>
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**Equipment/Facilities:** Check all that apply. (All classrooms have overhead projectors and permanent screens.)

Check level only if the specified equipment is needed for all sections of a course.

<input type="checkbox"/> Level I classroom Permanent screen & overhead projector	<input type="checkbox"/> Off-Campus Sites
<input type="checkbox"/> Level II classroom Level I equipment plus TV/VCR	<input type="checkbox"/> Testing Center
<input checked="" type="checkbox"/> Level III classroom Level II equipment plus data projector, computer, faculty workstation	<input type="checkbox"/> Computer workstations/lab
	<input type="checkbox"/> ITV
	<input type="checkbox"/> TV/VCR
	<input type="checkbox"/> Data projector/computer
	<input checked="" type="checkbox"/> Other Room equipped with metal shaping tools/equipment_____

**Assessment plan:**

Learning outcomes to be assessed (list from Page 3)	Assessment tool	When assessment will take place (semester & year)	Course section(s)/other population	Number students to be assessed
1. Identify and demonstrait principles of sheet metal shaping by hand.	Mid Term and Final Exam, Student Achievement record	Winter/09 & every 3 yrs.	All sections	All students
2. Analyze sheet metal properties and shapes and determine shaping procedures.	Student Achievement Record, Mid Term and Final exams.	Winter/09 & every 3 yrs.	All sections	All students
3. Perform sheet metal shaping process in accordance w/safety standards as instructed	Student Achievement Record.	Winter/09 & every 3 yrs.	All sections	All students

## MASTER SYLLABUS

**Scoring and analysis of assessment:**

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric/scoring guide.

Chapter test, mid-term and final exams will be scored against the answer sheet. Points will be assigned to each question with the results compared to the scoring guide.

Practical application of the task will be evaluated using the Student Achievement Record. Each task is worth 5 points and will be evaluated by the instructor based on the rubric below.

5 points = Excellent work done with no flaws and without help from instructor, follows safety requirements.

4 points = Above average work done with little to no flaws with some help from instructor. Follows all safety requirements.

3 points = Average work done with few flaws and some help from instructor. Follows most safety requirements.

2 points = Either below average work or Average work done with substantial help from instructor. Meets minimal safety requirements.

1 point = Failed to complete task or finished product not to code or student doesn't follow safety requirements.

2. Indicate the standard of success to be used for this assessment.

The standard of success of student performance and retention will be: 80% of the students will score 85% or higher on the mid-term, final exam and student achievement record.  $((\text{Mid term} + \text{Final} + \text{Achievement Record}) / 3 = 85\% \text{ or higher})$ .

3. Indicate who will score and analyze the data (data must be blind-scored).

Department chair and instructors will blind-score the data. We will review results to identify if there are areas of weakness or needed changes.

4. Explain the process for using assessment data to improve the course.

Assessment and update the course content. Analysis will also be done to evaluate the type of instruction used and if we identify areas of consistent weakness.