

**Clackamas Community College**  
Online Course/Outline Submission System

**Section #1 General Course Information**

**Department:** Automotive

**Submitter**

First Name: Dave

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**Course Prefix and Number:** AB - 106

**# Credits:** 2

**Contact hours**

Lecture (# of hours):

Lec/lab (# of hours): 44

Lab (# of hours):

Total course hours: 44

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

**Course Title:** Basic Metalforming

**Course Description:**

Instruction in basic metalforming techniques used in the fabrication of replacement or modified parts for the construction of automobiles, motorcycles, aircraft, and metal sculpture. Includes shop safety.

**Type of Course:** Career Technical Preparatory

**Reason for the new course:**

Change of format from CEU to credit bearing.

**Is this class challengeable?**

**No**

**Can this course be repeated for credit in a degree?**

**No**

**Is general education certification being sought at this time?**

**No**

**Does this course map to any general education outcome(s)?**

**No**

**Is this course part of an AAS or related certificate of completion?**

**No**

**Are there prerequisites to this course?**

**No**

**Are there corequisites to this course?**

**No**

**Are there any requirements or recommendations for students taken this course?**

**No**

**Are there similar courses existing in other programs or disciplines at CCC?**

**No**

Will this class use library resources?

**Yes**

**Have you talked with a librarian regarding that impact?**

**No**

Is there any other potential impact on another department?

**No**

Does this course belong on the Related Instruction list?

**No**

GRADING METHOD:

A-F or Pass/No Pass

**Audit: Yes**

When do you plan to offer this course?

**Not every term**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

**No**

Will this course appear in the college catalog?

**Yes**

Will this course appear in the schedule?

**Yes**

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. identify needed shapes in existing panels,
2. design and form small parts by cutting, bending, shrinking and stretching sheet steel and aluminum,
3. join formed pieces into a continuous shape,
4. demonstrate the principles of shop safety.

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***This course does not include assessable General Education outcomes.***

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Major Topic Outline:

1. Shop orientation and Safety
2. Tools and Equipment
  - a. Hand Tools
  - b. Mallets and Hammers
  - c. Shears and Aviation snips
  - d. Files and Abrasives
  - e. Box and Pan Brake and Stomp Shear
  - f. Wheeling Machines
  - g. Shrinkers and Stretchers
  - h. Power Hammer
3. Welding Equipment
  - a. Oxygen/acetylene
  - b. M.I.G. (GMAW)
  - c. T.I.G. (GTAW)
  - d. Fire Extinguishers
4. Introduction to Metalforming
  - a. Basic Shaping Tools and techniques
  - b. Pattern, Layout, Shaping Bucks and Forms
  - c. Preparing metals for shaping
  - d. Cutting, Bending, and Rolling
  - e. Stretching by Thinning or Spreading
  - f. Shrinking by Thickening or Gathering
  - g. Compound Curves and Transitions
  - h. Bead Rollers

- i. Power Hammer and Dies
- 5. Straightening and Finishing
  - a. Planishing, using Wheeling Machine and Hammer and Dolly
  - b. Heat Shrinking Steel and Aluminum
  - c. Filing and Sanding

Does the content of this class relate to job skills in any of the following areas:

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course: 0%

First term to be offered:

**Next available term after approval**

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