Auto Body Repair and Refinishing
Auto Body Staff:

• Paul Bunge
  Instructor

• Mark Forzley
  Student Service Assistant
Course Information

Course Description: You love cars, you know what makes them look good, and you love detail work. Learn how to turn that interest into a lucrative, rewarding career. Begin acquiring I-CAR Platinum points as you prepare for post-secondary education to earn advanced I-CAR Certifications.

What will my classes be like? Our ASE and I-CAR Certified Instructor will walk you through every facet of auto body repair including sheet metal straightening and body alignment, plastic/fiberglass repair, refinishing, detailing and masking, welding techniques, cost/time estimating, and management.
Course Information

Course Goals/Objectives:
• Body Shop Operations
• Hazardous Material, Personal Safety, and Refinish Safety
• Auto Body Construction
• Body Shop Hand Tools
• Body Shop Power Tools and Equipment
• Welding and Cutting
• Simplified Metal Straightening
• Simplified Plastic Repairs
• Body and Structural Alignment
• Hood, Door, and Fender Panel Replacement
• Mechanical Component Repair
• Refinishing Materials
• Refinishing Equipment
• Surface Preparation
• Finish Application
• Career Opportunities
Course Information

Course Outline:

- **August** - Body Shop Operations
- **September** - Hazardous Materials/Personal Safety, Vehicle Construction, and Tools /Equipment
- **October** - Simplified Metal Repair and Simplified Plastic/Fiberglass Repair
- **November** - Panel Replacement/alignment and Damage Analysis
- **December** - Refinishing Materials/Equipment
- **January** - Refinishing Techniques
- **February** - Welding Practices/Equipment
- **March** - Detailing/Striping, individual projects
- **April** - Estimating, individual projects
- **May** - Career Opportunities, individual projects
Assessment Standards/Grading Practices: Students are evaluated by their productivity on both written assignments and hands-on skills as well as their employability traits such as safety, attendance, initiative, cooperation, and dependability.

College Credit Opportunities: Students will have the opportunity to earn up to 3 Dual Credit Hours per semester with a total of 12 over a two-year period through Kishwaukee Community College.

Field Experiences/Competitive Opportunities: Internships/job shadowing, and SKILLS USA

College and Career Pathways: Opportunity to earn valuable industry standard I-CAR points towards Platinum Certification in the areas of Safety, Refinishing, and Welding, National Career Readiness Certificate (NCRC), and SP2 Safety training and Certification
Placement Guidelines/Recommendations:

Academic guidelines are recommendations intended to assist in scheduling students for success.

**Academic:**
- Regular Attendance
- Mathematics-Ratios, measurement
- Reading/ Writing-locating and reading for information on repair estimates, material data sheets, and SOP’s

**Professional Skills:**
- Time Management
- Personal Motivation
- Problem-solving Ability
- Reliability/Dependability
- Attention to Detail
- Teamwork
Curriculum Examples for Math and Reading

Reading the Sixteenths Rule

1

2

3

37/16" = 2 5/16"
22/16" = 1 6/16"
16/16" = 1"
15/16"
14/16" = 7/8"
13/16"
12/16" = 3/4"
11/16"
10/16" = 5/8"
9/16"
8/16" = 1/2"
7/16"
6/16" = 3/8"
5/16"
4/16" = 1/4"
3/16"
2/16" = 1/8"
1/16"
Reading the Eighths Rule

13/8" = 1 5/8"
8/8" = 1"
7/8"
6/8" = 3/4"
5/8"
4/8" = 1/2"
3/8"
2/8" = 1/4"
1/8"
ASSIGNMENT SHEET #3—DRAWING LINES AND OBJECTS ACCORDING TO DIMENSIONS

1. Draw straight lines using the following dimensions.
   a. 3 3/4 inches
   b. 2 1/16 inches
   c. 2 10/16 inches
   d. 1 14/16 inches
   e. 2 1/4 inches

2. Draw a square 1 7/8 inches.
Construction Technology
Reading a Rule
Pre-test

Directions: In the rulers below, fill in the box with the correct measurement. Remember to reduce your fractional amounts to lowest terms.
Preparing Paint Mixtures – Auto Body
WS 1

Name ___________________________ Date ____________

Fill in the missing amounts in the chart below.

<table>
<thead>
<tr>
<th>Ratio of Color to reducer</th>
<th>Amount of color</th>
<th>Amount of reducer</th>
<th>Amount of RTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 : 2</td>
<td></td>
<td></td>
<td>18 oz</td>
</tr>
<tr>
<td>1 : 3</td>
<td></td>
<td></td>
<td>22 oz</td>
</tr>
<tr>
<td>2 : 1</td>
<td></td>
<td>6 oz</td>
<td></td>
</tr>
<tr>
<td>2 : 3</td>
<td></td>
<td>7 oz</td>
<td></td>
</tr>
<tr>
<td>1 : 1.5</td>
<td></td>
<td>4 oz</td>
<td></td>
</tr>
<tr>
<td>2 : 3.5</td>
<td></td>
<td></td>
<td>27.5 oz</td>
</tr>
</tbody>
</table>

| 2 : 3                     | 8               |                   |               |
| 2 : 3                     |                 | 6                 |               |
| 2 : 3                     |                 |                   | 30            |
## PRODUCT INFORMATION

**MC161 High Solids Urethane Clear**

### Background
- **Omni** MC161 is a fast-drying, two component, acrylic high solids urethane clear designed for today's automotive collision centers.

### MC161 High Solids Urethane Clear
- Clear: MC161 High Solids Urethane Clear

### Compatible Surfaces:
- MBC Acrylic Basecoat
- MTK Acrylic Urethane
- MAE/MH101/MH202 Catalyzed Acrylic Enamel

### Preparation:
- Refer to the information bulletin for MBC, MTK, or MAE/MH101 for preparation of the color. The maximum time to clearcoat is 24 hours for MBC color and 1 week for MTK color or MAE/MH101/MH202 color.

### Mixing Ratios:
- **MC161**
- **MH167/168/169 Hardener**
  - Pot Life 3 hours at 70° (21°C)

### Additives:
- M148 Flattening Agent
  - Flat: Add 51 oz./RTS gal.
  - Eggshell: Add 45 oz./RTS gal.
  - Semi-gloss: Add 42 oz./RTS gal.
- MR189 Retarder
  - Add 5% / RTS quart
- MX193 Flex Add: Add 10% / RTS quart
- MX194 Fisheye Eliminator: Add 1/2 oz. / RTS quart
- MX195 Accelerator: Add 1 oz. / RTS quart
- MX200 Accelerator: Add 1/2 oz. / RTS quart

- *Clear may be flattened and used as a specialty coating for low gloss interior and exterior applications.

- **Addition of retarder in excess of 5% on RTS quart may result in a non-compliant ready to spray VOC. Verify local regulations prior to use.**

### Application Coats:
- Apply 2 coats

### Air Pressure:
- **HVLP**
  - 8 - 10 psi at the air cap
  - Conventional: 50 - 60 psi at the gun

### Gun Setup:
- 1.3 – 1.6 mm or equivalent

### Drying Times:
- **Between Coats**
  - 5 - 10 minutes at 70°F (21°C)
- **Air Dry**
  - Dust: 30 – 40 minutes
  - Tack: 2 – 3 hours
  - Tape: 9 hours
  - 16 hours at 70°F (21°C) to polish and put into service
- **Force Dry**
  - 30 minutes at 140°F (60°C), allow 2 hours to polish and put into service
- **IR**
  - 12 – 15 minutes

### Clean Up:
- Clean spray guns, gun cups, storage pots, etc., thoroughly with MR Reducer, MS 100 General
- Purpose Solvent or other appropriate clean up solvent after each use
- Follow EPA guidelines for proper storage and disposal of solvent-borne waste paint

### Properties:
- **VOC**
  - Package: 4.22 lbs./gal.
  - **Film Build Per Coat**
  - Applied (2:1): 1.5 – 2.0 mil
  - **Square foot coverage at 1 mil**
  - Applied (2:1): 619 sq. ft./gal., no loss

### Limitations:
- **Omni** AU and Omni LV should not be combined with components of other product lines.

### Precautionary Information
- The contents of this package may have to be blended with other components before the product can be used. Before opening the packages, be sure you understand the warning messages on the labels of all components, since the mixture will have the hazards of all its parts. Spray equipment must be handled with due care and in accordance with manufacturer's recommendations. Follow label directions for respirator use. Wear eye and skin protection. Observe all applicable precautions.

### Emergency Information
- **EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION** (304) 843-1300 IN CANADA (514) 646-1320.

### Material Safety Data Sheet
- Material Safety Data Sheets for the PPG products mentioned in this publication are available through your Omni Distributor.

For additional information regarding this product, see the MSDS and label information.

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