



## ARTICULATION AGREEMENT

Date Approved: 01/04/18

<b>Yuba College Course:</b>	<b>Dept:</b> Auto Tech <b>Course No:</b> Auto 20 & 21 <b>Title:</b> Auto Tech Skills and Intro to Automobiles	<b>High School or ROP Course:</b>  <b>Hours:</b>	ROP Automotive Technology  180 hrs
<b>College:</b>	Yuba College	<b>School/ROP:</b>	Yuba City High School/Tri-County ROP

**A. COLLEGE UNITS:** AUTO 20 - 3      AUTO 21 - 3      TOTAL - 6 Units

**B. GENERAL COURSE DESCRIPTION FOR AUTO 20:**

Includes basic technical skills used by all automotive service and repair technicians, including tool selection, use and maintenance, practical measuring skills and useful bolt, nut and thread repair techniques. Also includes electrical circuit meter usage and problem solving techniques.

**C. COURSE CONTENT FOR AUTO 20:**

1. Hand tools types, selection and use techniques.
2. Power tool types, selection and use techniques.
3. Measuring skills.
  - a. rules
  - b. nominal sizes
  - c. decimal specifications
  - d. caliper use
  - e. micrometer use
  - f. gauges
4. Bolt and thread identification.
5. Thread repair systems.
6. Compounds and sealants.
7. Electrical meter usage and wiring diagrams.
8. Job resume and interview skills.

**D. COMPETENCIES AND SKILL REQUIREMENT (PERFORMANCE OBJECTIVES) FOR AUTO 20:**

***At the conclusion of this course, the student should be able to:***

1. Write and correctly spell tool names.
2. Demonstrate knowledge of tool use and abuse.
3. Demonstrate critical thinking when selecting tools.
4. Interpret inch and metric rule measurements.
5. Measure outside diameters, inside diameters, depth, and length of common mechanical automotive parts.
6. Demonstrate accurate use of three or more thread repair systems.
7. Apply compounds and sealants to specific fastener applications.
8. Measure volts, amperes and ohms in a typical automotive circuit.
9. Find and 'open', 'short', 'grounded' or 'high resistance' failure in typical automotive electrical circuits.
10. Learn to read and interpret automotive wiring diagrams.
11. Evaluate and determine correct tool for a specific job.
12. Evaluate electrical circuit data from electrical wiring diagrams
13. Determine correct repair procedures based on industry standards. **\*\*Requires Critical Thinking\*\***

**E. GENERAL COURSE DESCRIPTION FOR AUTO 21:**

A comprehensive study of the automobile, including fundamental operating principles, nomenclature, structural analysis, major design

theories, systems function, systems service, minor repair procedures, major repair complexities, current laws and regulations, political action, and personal economics/decision making.

## F. COURSE CONTENT FOR AUTO 21:

1. Operating Principles
  - a. Work, energy, power
  - b. Common components
  - c. Nomenclature and function
  - d. Engine design and classification
  - e. Drive trains, transmission of power
  - f. Historical developments
  - g. Current technology
2. Operating Systems, Function, and Service
  - a. Cooling
  - b. Lubrication
  - c. Fuel
  - d. Ignition
  - e. Starting
  - f. Charging
  - g. Drive trains
  - h. Brakes
  - i. Pollution controls
  - j. Steering and suspension
  - k. Tires
3. Minor Repairs
  - a. Major repairs complexities
  - b. Overhaul
  - c. Rebuilding/Replacing
  - d. Used parts
4. Laws Affecting Automobiles and Consumers
  - a. Bureau of Automotive Repair
  - b. N.A.I.S.E.
  - c. Clean Air Act
  - d. Pollution controls/certification
  - e. Hazardous waste
5. Automotive Economics
  - a. New cars/used cars
  - b. Buying/selling
  - c. Insurance
  - d. Collision damage
  - e. Job opportunities

## G. COMPETENCIES AND SKILL REQUIREMENT (PERFORMANCE OBJECTIVES) FOR AUTO 21:

***At the conclusion of this course, the student should be able to:***

1. Identify and classify automotive engines, drive trains, and body designs. \*\* Requires Critical Thinking\*\*
2. Identify the major components of an automobile and give a theoretical explanation of the function and practical description of the working characteristics.
3. Discuss the evolutionary development of today's automobile. \*\* Requires Critical Thinking\*\*
4. Describe the function and perform service procedures common to the major operating systems of the automobile. \*\* Requires Critical
5. Complete minor "do-it-yourself" repairs to automotive industry standards. \*\* Requires Critical Thinking\*\*
6. Analyze major repair complexities using automotive service manuals. \*\* Requires Critical Thinking\*\*
7. Discuss laws affecting the automobile and the consumer by reporting on those aspects encountered in daily living. \*\* Requires Critical Thinking\*\*
8. Apply decision-making principles to hypothetical automotive economic situations. \*\* Requires Critical Thinking\*\*
9. Describe the application of various physical laws relative to automotive operation. \*\* Requires Critical Thinking\*\*
10. Evaluating, troubleshooting, diagnosing, repairing and testing the following systems on an automobile: a) Cooling, b) Lubrication, c) Fuel, d) Ignition, e) starting, f) Charging, g) Drive trains, h) Brakes, i) Emission controls, j) Steering and suspension, and k) Tires \*\* Requires Critical Thinking\*\*

**H. CREDIT BY EXAMINATION CRITERIA:**

Students must obtain a grade of 'B' or better in the course and a grade of 'B' or better on the final examination.

**I. PROCEDURES AND/OR CRITERIA FOR COURSE ARTICULATION:**

1. The high school/ROP instructor will enter an articulation agreement with Yuba College.
2. Students will enroll into the CTE Transitions Program during the academic year at their high school/ROP.
3. When the student has completed the approved credit by examination criteria for the course the high school/ROP instructor will provide the CTE Transitions Program Office the course grade and final exam grade.
4. CTE Transitions processes students that met credit by examination criteria.
5. Students are awarded transcript credit for the articulated course in which they completed.

**J. TEXTBOOKS OR OTHER SUPPORTING MATERIALS (INCLUDING SOFTWARE):**

AUTO Fundamentals by Stockel

Agreement was based on Statewide Career Pathways Project template: Yes  No

Name of Template used: Introduction to Automotive Technology

This agreement will be reviewed annually.

Signatures are provided per the Articulation Credit by Examination Agreement Form:

**HIGH SCHOOL/ROP/DISTRICT SIGNATURES:**

Requested by:

Arturo Moreno Arturo Moreno 11/9/16  
High School Instructor (Print & Sign) Date

High School Dept Chair/Coordinator (Print & Sign) Date

Aserto Rocin Aserto Rocin 11.9.16  
High School Principal (Print & Sign) Date

ROP Director (If Applicable) (Print & Sign) Date

**COLLEGE SIGNATURES:**

Approved by:

Philly Melts 12/11/17  
College Instructor Date

FWO 12/21/17  
Campus Dean/Department Dean Date

Benja Lellan 1/4/18  
V.P. Academic and Student Services Date

District Articulation Officer Date