ARTICULATION RENEWAL FORM
2015 – 2016 (Effective Fall 2015 through Spring 2017) (Renew Fall 2017)

High School: Bret Harte
High School Course: Auto 1
Columbia College Course: AT 100 – Introduction to Automotive Technology

Completed by High School Instructor

A. I have reviewed the current Articulation Agreement for this course with the appropriate Columbia College faculty and wish to report the following:

I verify that our course listed above has no changes in the title, department name, course number, course content, course standards, or other curricular modification. (Skip Part B and Go to Part C)

I verify that the following changes need to be made: (Check all that apply, fill in the specific change in the space provided and complete Part B and C)

Title:

Department Name:

Course Number:

Other:

B. I verify that changes have been made to the following: (Current and Updated Course Outline and All Examinations are required for any changes made to this section) (Please attached updated course outline/examination.)

Course Content

Textbook Change

Course Objectives

Examination/Portfolio

College Examination

C. Please provide all requested information below:

Textbook Title: Modern Automotive Technology

Author: Duffy, James

Publication Date: 2014

Edition: 8th

High School Instructor: [Signature] Date: 3/16/16

High School Chair Signature: [Signature] Date: 3/16/16

Columbia College Instructor: [Signature] Date: 3/3/16

Columbia College CTE Dean: [Signature] Date: 3/21/16

C:\Users\vsooter\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\GUVC8LXI\Bret Harte Auto 100 Articulation Renewal Request.docx

Oct. 13, 2015
Discipline: Automotive Technology

Date Accepted: 4/4/2012
Renewal due during Spring 2013 (one-year term agreement)

Articulation Request and Agreement

This request and agreement is submitted for consideration of the following course as an articulated course at Columbia College. Students would receive course credit at Columbia College.

Directions:
1. Use a separate form for each course.
2. Attach the course outline for the course.
3. Attach the course final if course is to be considered for credit.
4. Mail to: Dean of Instructional Services, Career Technical Education
11600 Columbia College Drive
Sonora, CA 95370

Completed by High School Instructor

<table>
<thead>
<tr>
<th>High School/ROP:</th>
<th>Bret Harte High School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor Name:</td>
<td>Ken Sooter</td>
</tr>
<tr>
<td>Telephone Number:</td>
<td></td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:ksooter@bhuhsd.k12.ca.us">ksooter@bhuhsd.k12.ca.us</a></td>
</tr>
<tr>
<td>Address:</td>
<td>365 Murphys Grade Road Angels Camp, CA</td>
</tr>
</tbody>
</table>

High School / ROP Course Title: Auto 1

High school / ROP Course Description:
Designed as an introductory course in automotive. Course will cover: Automotive safety, hand and power tools, body and chassis systems, engine systems, electrical systems, power train systems, emission control systems, and accessory systems. Hands-on activities include 85 shop projects on live vehicles. 40% of the time in class lecture or demonstrations, 60% of the time in shop.

College Course Title: Introduction to Automotive Technology – AT 100
College Units: 4
HS/ROCP Credits: 10
Course Content

This course will consist of lecture, demonstrations, homework (an internet assignment), quizzes, and shop work. Internet access is required in this course. Basic automotive practices and basic skills will be taught. Students will be required to obtain access to internet for specific projects. Late work will be accepted, at a reduced percentage. Missed days of instruction can be made up before school, at lunch, or after school with the instructor’s approval. Extra credit jobs may be performed at home with the approval of the instructor and the guidance of your parent or guardian. A maximum of 200 points extra credit may be earned per semester. Total Hours of instruction: 144 hours.

Competencies and Skill Requirements (Use additional pages as necessary)

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

Introduction:
1. Complete Vehicle owner’s manual worksheet
2. Determine VIN # worksheet
3. Identify Shop equipment (No RO Required)
4. Safety Quiz@100% (No RO Required)
5. Determine shop safety layout (No RO Required)
6. Tool ID (No RO Required)
7. ID vehicle lift points
8. Complete repair order

Service Area 1 Oil Change Service
1. Raise & support a vehicle (jack stands
2. Raise a vehicle using a frame-contact lift
3. Check engine oil level (projects 11-13 complete together)
4. Perform oil change
5. Change oil filter

Service Area 2 Under hood Inspection:
1. Check brake master cylinder level
2. Check power steering fluid level
3. Check and correct coolant level
4. Identify and inspect Accessory drive belts
5. Battery visual inspection
6. Inspect operation of lighting system
7. Visibility checklist
8. On-the-ground safety checklist
9. Check automatic transmission fluid
10. Inspect shock absorbers

Service Area 3 Under Vehicle Service
1. ID steering & suspension system on computer (No RO Required)
2. Tire wear inspection
3. ID Suspension & steering systems on computer
4. Inspect suspension and steering linkage
5. Chassis lubrication

Service Area 4 Tire and Wheel Service
1. Tire Identification
2. Tire Maintenance
3. Replace a rubber valve stem (Class Demo)
4. Dismount & Mount tires
5. Repair a tire puncture
6. Computer tire balance

Service Area 5 Service Information
1. under hood label worksheet
2. Motor service manual worksheet (No RO Required)
3. CD-ROM worksheet – All data (Ro RO Required)

Service Area 6 Cooling and Fuel Service
1. ID cooling system on computer (NO RO Required)
2. Cooling system inspection (41 through 46 use One RO)
3. Pressure test a radiator and radiator cap
4. Perform a cooling system combustion leak test (DO Liquid Test)
5. Check coolant strength (use Refractometer)
6. Replace a radiator hose (upper)
7. Flush cooling system
8. Adjust an alternator V-belt
9. ID Fuel system on computer (NO RO Required)
10. Carburetor Inline fuel filter service
11. PCV valve service
12. 02 sensor test (Fluke 88 & Probe)

Service Area 7 Electrical Services
1. ID electrical system on computer (NO RO Required)
2. Honda trainer Job #ELS 22
3. Honda trainer Job ELS 24
4. Blade fuse testing and service
5. Splice a wire with a crimp tool (No RO Required)
6. ID Battery computer (No RO Required)
7. Battery service (59 through 65 use one RO)
8. Battery specific gravity test
9. Battery open voltage test
10. Battery slow charge
11. Battery capacity/load test
12. Battery sulfation test (three minute charge test)
13. Battery Drain test
14. Replace a tail/Brake light

Service Area 8 Tune-up Services
1. ID Spark Plug Problems on computer (No RO Required)
2. Replace spark plugs (Complete project 66072 on one RO)
3. Inspect spark plug cables (measure resistance)
4. Replace a distributor cap & rotor
5. Check ignition timing using a timing light
6. Perform a compression test
7. Read an oscilloscope (Sun Scope)
8. Perform poser balance test (Sun scope)
9. ID engine components on computer (No RO Required)
10. Restore a screw thread (No RO Required)
11. Drill and tap a Hole (No RO Required)

Service Area 9 Chassis Service
1. Manually bleed brakes and flush system (78-79 One RO)
2. Remove a drum using an impact wrench
3. Inspect drum brakes
4. Inspect front disc brakes
5. Adjust a tapered roller wheel bearing (81-82 one RO)
6. Repack wheel bearings
7. Computer final test (auto insight) (No RO Required)
Measurement Methods (include any industry certification or licensure):

Skills are evaluated based on project mastery, quiz grades, text materials and general shop competencies.

GRADING:

Student evaluation will be based on three various areas:
1. Knowledge of information (quizzes, tests, worksheets, and performance evaluations.)
2. Application of materials (project completion, safety, and workmanship.
3. Participation (initiative, teamwork, responsibility, and cooperation) Students will receive 20 points per day for effective participation.

- Grades will be evaluated by percentage of points earned as follows:

  * 101% - 105% = A+
  * 90% - 100% = A
  * 80% - 89% = B
  * 70% - 79% = C
  * 60% - 69% = D
  * 0% - 59% = F

In order to receive college credit, student must pass a competency exam with 70% or better, administered by Columbia College faculty, Erik Andal or his designee. The score on the exam administered by the college will also determine the grade reflected on the transcript as follow: 70% - 100& = Pass.

Sample Textbooks or Other Support Materials (including Software):

Software: ATC Challenge, shop Talk, CDX, All data

CC faculty Signature: [Signature] Date: 4/9/2012

[Office use only.] TOPs Code: [Office use only.] Internal Tracking Number:
Completed by Columbia College

This portion is completed after CC faculty and H.S. faculty meet and agree on the terms

of the articulation agreement.

Department faculty:  ☑ Approved  ☐ Not Approved
Dean:  ☑ Approved  ☐ Not Approved
CTE Transition Coordinator  ☑ Approved  ☐ Not Approved
Admissions and Records notification  ☑ Date 4-9-12
High school notification:  ☑ date: 4-9-12
Beginning Automotives
Laboratory Projects

There are 85 projects listed below. I will demonstrate the projects on a weekly basis. There are Job sheets in your binder that you should use as a guide to perform the task. All jobs require a Repair Order (RO) authorized by me prior to performing the work unless otherwise stated. You should also check the service manuals or Alldata® for accurate procedures. Don’t fall behind in project completion; you need to get required projects done each week. Absences will hinder your ability to complete projects you will have to come in before school, at lunch, or after school to make them up.

<table>
<thead>
<tr>
<th>P: ✓</th>
<th>M: ✓</th>
<th>P = Proficient</th>
<th>M = Mastered</th>
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<tbody>
<tr>
<td>1.</td>
<td></td>
<td>Complete Auto insight Body and Exterior test on computer (No RO Required)</td>
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<td>2.</td>
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<td>Complete Auto insight Behind the Wheel test on computer (No RO Required)</td>
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<td>3.</td>
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<td>wks 1 Complete Vehicle owner’s manual worksheet</td>
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<td>4.</td>
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<td>wks 2 Determine VIN # worksheet</td>
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<td>5.</td>
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<td>wks 3 Identify shop equipment (No RO Required)</td>
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<td>6.</td>
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<td>wks 4 Safety worksheet (No RO Required)</td>
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<td>7.</td>
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<td>wks 5 Determine shop safety layout (No RO Required)</td>
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<td>8.</td>
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<td>wks 10-4 Tool ID (No RO Required)</td>
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<td>9.</td>
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<td>ID engine components on computer (No RO Required)</td>
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<td>10.</td>
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<td>wks 6 ID vehicle lift points</td>
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<td>11.</td>
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<td>wks 7 Complete Repair order</td>
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Service Area 1 Oil Change Service

12. |      | Complete Auto insight Engine Lubrication test on computer (No RO Required) |              |
13. |      | Complete Auto insight Greasy Side Up test on computer (No RO Required) |              |
14. |      | wks 1-2 Raise & support a vehicle (jack stands) (Instructor must be present) |              |
15. |      | wks 1-3 Raise a vehicle using a frame-contact lift (Instructor must be present) |              |
16. |      | wks 1-4 Check engine oil level |              |
17. |      | wks 1-5 Perform oil change (Put name on hoist lift list for your teams turn) |              |
18. |      | wks 1-6 Change oil filter |              |

Service Area 2 Underhood Inspection

19. |      | Complete Auto insight Under Hood test on computer (No RO Required) |              |
20. |      | wks 2-1 Check brake master cylinder level |              |
21. |      | wks 2-3 Check power steering fluid level |              |
22. |      | wks 2-4 Check and correct coolant level |              |
23. |      | wks 2-5 Identify and inspect Accessory drive belts |              |
24. |      | wks 2-6 Battery visual inspection |              |
25. |      | wks 2-7 Inspect operation of lighting system |              |
26. |      | wks 2-8 Visibility checklist |              |
<table>
<thead>
<tr>
<th>Service Area</th>
<th>Task Description</th>
<th>Reference Numbers</th>
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<tbody>
<tr>
<td>2. Underhood Inspection</td>
<td>27. □ □ wks 2-10 On-the-ground safety checklist</td>
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<tr>
<td>28. □ □ wks 2-11 Check automatic transmission fluid</td>
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<td>29. □ □ wks 2-12 Inspect shock absorbers</td>
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<tr>
<td>3. Under Vehicle Service</td>
<td>30. □ □ Complete Auto Insight Tires and Wheels test on computer (No RO Required)</td>
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<td>31. □ □ wks 3-3 Tire wear inspection</td>
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<td>32. □ □ wks 3-5 Inspect suspension and steering linkage</td>
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<td>33. □ □ wks 3-6 Chassis lubrication</td>
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<tr>
<td>4. Tire and Wheel Service</td>
<td>34. □ □ ID steering &amp; suspension system on computer (No RO Required)</td>
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<td>35. □ □ wks 4-1 Tire Identification</td>
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<td>36. □ □ wks 4-2 Tire Maintenance</td>
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<td>37. □ □ wks 4-3 Replace a rubber valve stem (Class Demo)</td>
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<td>38. □ □ wks 4-5 Dismount &amp; Mount tires</td>
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<td>39. □ □ wks 4-6 Repair a tire puncture</td>
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<td>40. □ □ wks 4-7 Computer tire balance</td>
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<tr>
<td>5. Service Information</td>
<td>41. □ □ wks 5-1 Underhood label worksheet</td>
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<td>42. □ □ wks 5-2 Motor service manual worksheet (No RO Required)</td>
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<td>43. □ □ wks 5-4 CD-ROM worksheet - Alldata (No RO Required)</td>
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<tbody>
<tr>
<td>6. Cooling and Fuel Service</td>
<td>44. □ □ ID cooling system on computer (No RO Required)</td>
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<td>45. □ □ wks 6-1 Cooling system inspection (45 through 50 use One RO)</td>
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<td>46. □ □ wks 6-2 &amp; 6-3 Pressure test a radiator and radiator cap</td>
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<td>47. □ □ wks 6-4 Perform a cooling system combustion leak test (CO Liquid Test)</td>
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<td>48. □ □ wks 6-5 Check coolant strength (use Refractometer)</td>
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<td>49. □ □ wks 6-6 Replace a radiator hose (upper)</td>
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<td>50. □ □ wks 6-13 Flush cooling system</td>
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<td>51. □ □ wks 6-7 Adjust an alternator V-belt</td>
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<tr>
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<tbody>
<tr>
<td>6. Cooling and Fuel Service</td>
<td>52. □ □ ID Fuel system on computer (No RO Required)</td>
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<tr>
<td>53. □ □ wks 6-17 Carburetor inline fuel filter service</td>
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<td>54. □ □ wks 6-19 PCV valve service</td>
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<td>55. □ □ wks 6-20 O2 sensor test (Fluke 88 &amp; Probe)</td>
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</table>
Beginning Automotives

Name: _______________________

Service Area 7 Electrical Services
56. □ □ ____ ID electrical system on computer (No RO Required)
57. □ □ ____ wks 7-2 Blade fuse testing and service
58. □ □ ____ wks 7-3 Splice a wire with a crimp tool (No RO Required)
59. □ □ ____ wks 7-4 Solder a wire connection (western union) (No RO Required)
60. □ □ ____ ID Battery computer (No RO Required)
61. □ □ ____ wks 7-5 Battery service (61 through 67 use one RO)
62. □ □ ____ wks 7-8 Battery specific gravity test
63. □ □ ____ wks 7-9 Battery open voltage test
64. □ □ ____ wks 7-10 Battery slow charge
65. □ □ ____ wks 7-13 Battery capacity/load test
66. □ □ ____ wks 7-15 Battery sulfation test (three minute charge test)
67. □ □ ____ wks 7-16 Battery Drain test
68. □ □ ____ wks 7-18 Replace a tail/brake light

Service Area 8 Tune-up Services
69. □ □ ____ ID Spark Plug Problems on computer (No RO Required)
70. □ □ ____ wks 8-1 Replace spark plugs (Complete projects 70-76 on one RO)
71. □ □ ____ wks 8-2 Inspect spark plug cables (measure resistance)
72. □ □ ____ wks 8-3 Replace a distributor cap & rotor
73. □ □ ____ wks 8-4 Check ignition timing using a timing light
74. □ □ ____ wks 8-8 Perform a compression test
75. □ □ ____ wks 8-6 Read an oscilloscope (Sun scope)
76. □ □ ____ wks 8-7 Perform power balance test (Sun scope)
77. □ □ ____ ID engine components on computer (No RO Required)
78. □ □ ____ wks 8-18 Restore a screw thread (No RO Required)
79. □ □ ____ wks 8-20 Drill and tap a Hole (No RO Required)

Service Area 9 Chassis Service
80. □ □ ____ ID Brake components on computer (No RO Required)
81. □ □ ____ wks 9-1 Manually bleed brakes and flush system
82. □ □ ____ wks 9-2 Remove a drum using an impact wrench
83. □ □ ____ wks 9-3 Inspect drum brakes
84. □ □ ____ wks 9-4 Inspect front disc brakes
85. □ □ ____ wks 9-7 Adjust a tapered roller wheel bearing (83-84 one RO complete both at same time)
86. □ □ ____ wks 9-8 Repack wheel bearings
87. □ □ ____ Honda trainer Job #ELS 22
88. □ □ ____ Honda trainer Job ELS 24
89. □ □ ____ Computer final test (auto insight) (No RO Required)