

SYLLABUS

DATE OF LAST REVIEW: 09/2019

CIP CODE: 47.0603

SEMESTER: Departmental Syllabus

COURSE TITLE: Paint and Refinishing 1

COURSE NUMBER: ACRT0160

CREDIT HOURS: 3

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: Departmental Syllabus

E-MAIL KCKCC issued email accounts are the official means for communicating with our students.

PREREQUISITE(S): ACRT0100

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, <http://www.kckccbookstore.com/>, for the required texts for your particular class.

COURSE DESCRIPTION: This course will give the student basic knowledge and skills in automotive refinishing. Safety and product knowledge are emphasized. Proper surface preparation along with introduction to refinishing equipment will be included. Paint code interpretation will also be learned. Complete vehicle detailing and solving paint defects is another area of instruction.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:

- I. 4.A Safety Precautions
- II. 4.B Surface Preparation
- III. 4.C Spray Gun and Related Equipment Operation
- IV. 4.D Paint Mixing, Matching, and Applying

- V. 4.E Paint Defects - Causes and Cures
- VI. 4.F Final Detail

EXPECTED LEARNER OUTCOMES:

- A. The student will be able to identify safety and personal health hazards according to OSHA guidelines and the 'Right to Know' law
- B. The student will be able to determine the different types of substrates and sanding materials relevant to autobody surface preparation
- C. The student will be able to identify the process to clean and prepare a substrate for paint
Linked External Standards
- D. The student will be able to distinguish between the properties, uses and manufacturer specifications of metal treatments and primers
- E. The student will be able to distinguish among the various types of spray guns and equipment
- F. The student will be able to explore various paint codes and specifications for use
- G. The student will be able to identify the various paint systems
- H. The student will be able to explore the types of paint defects
- I. The student will be able to distinguish between damage and non-damage related corrosion
- J. The student will be able to identify final detail procedures

COURSE COMPETENCIES:

Upon successful completion of this course: in the classroom or classroom shop setting and by meeting any institution-required NATEF Tasks from the criteria outlined below. NATEF Guidelines of: 95% of HP-I items must be taught in the curriculum; 90% of HP-G items must be taught in the curriculum

The student will be able to identify safety and personal health hazards according to OSHA guidelines and the 'Right to Know' law

(Linked External Standards 4.A Safety Precautions)

- 1. The student will be able to identify and take necessary precautions with hazardous operations and materials according to federal, state, and local regulations. (HP-I) (4.A.1)(EDS02 module 1 REF01 module 4 REF03 modules 2,4 WKR01 module3)
- 2. The student will be able to identify safety and personal health hazards according to OSHA guidelines and the Right to Know Law. (HP-I) (4.A.2)(WKR01 module1)
- 3. The student will be able to inspect spray environment to ensure compliance with federal, state and local regulations, and for safety and cleanliness hazards. (HP-I)(4.A.3)(EDS02 module 1 REF01 module 3 WKR01 module 2)
- 4. The student will be able to select and use the NIOSH approved personal sanding respirator. Inspect condition and ensure fit and operation. Perform proper maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation. (HP-I) (4.A.4)(WKR01 module 4)
- 5. The student will be able to select and use the NIOSH approved (Fresh Air Make-up System) personal painting/refinishing respirator system. Perform proper maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation. (HP-I)(4.A.5)(EDS02 module 1 REF01 module 2 WKR01 module 4)

6. The student will be able to select and use the proper personal safety equipment for surface preparation, spray gun and related equipment operation, paint mixing, matching and application, paint defects, and detailing (gloves, suits, hoods, eye and ear protection, etc.). (HP-I) (4.A.6)(EDS02 modules 1,2,3,4,5,6,7 REF02 module 2 REF03 modules 2,4 WKR01 module 4

The student will be able to determine the different types of substrates and sanding materials relevant to autobody surface preparation

(Linked External Standards 4.B Surface Preparation)

7. The student will be able to inspect, remove, store, and replace exterior trim and components necessary for proper surface preparation. (HP-I)(4.B.1)(DAM04 v.2.1 module 4 DAM04 v.2.2 module 3 TRM01 modules 3,6,7)
8. The student will be able to soap and water wash entire vehicle; use appropriate cleaner to remove contaminants. (HP-I)(4.B.2)(EDS02 module 3 REF02 module 1 REF04 module 1)
9. The student will be able to inspect and identify substrate, type of finish, surface condition, and film thickness; develop and document a plan for refinishing using a total product system. *(HP-I) (4.B.3)(DAM v.2.4 module 3 DAM01 v.2.5 module 4 EDS02 module 1)
10. The student will be able to remove paint finish. (HP-I)(4.B.4)(EDS02 module 3 REF module 2)
11. The student will be able to dry or wet sand areas to be refinished. (HP-I)(4.B.5)(EDS02 module 3 REF02 module 4 REF03 module 2)
12. The student will be able to featheredge damaged areas to be refinished. (HP-I)(4.B.6)(EDS02 module 3 REF02 module 4)
13. The student will be able to apply suitable metal treatment or primer in accordance with total product systems. (HP-I) (4.B.7)(CPS01 module 3 EDS02 module 4 REF02 module 4)
14. The student will be able to mask and protect other areas that will not be refinished. (HP-I)(4.B.8)(EDS02 module 3 REF02 module 2)
15. The student will be able to mix primer, primer-surfacer or primer-sealer. (HP-I)(4.B.9)(EDS02 module 4 REF01 module 5 REF02 module 4 REF03 module 4)
16. The student will be able to apply primer onto surface of repaired area. (HP-I)(4.B.10)(EDS02 module 4 REF02 module 4)
17. The student will be able to apply two-component finishing filler to minor surface imperfections. (HP-I) (4.B.11)(EDS01 module 3 STS01 module 2)
18. The student will be able to dry or wet sand area to which primer-surfacer has been applied. (HP-I)(4.B.12)(EDS02 module 4 REF02 module 4)
19. The student will be able to dry sand area to which two-component finishing filler has been applied. (HP-I) (4.B.13)(EDS01 module 3 STS01 module 2)
20. The student will be able to remove dust from area to be refinished, including cracks or moldings of adjacent areas. (HP-I)(4.B.14)(EDS02 module 3 REF02 module 4 REF03 modules 3,4)
21. The student will be able to clean area to be refinished using a final cleaning solution. (HP-I)(4.B.15)(EDS02 module 3 REF03 module 3)
22. The student will be able to remove, with a tack rag, any dust or lint particles from the area to be refinished. (HP-I) (4.B.16)(EDS02 module 5 REF02 modules 3,4 REF03 module 4)

23. The student will be able to apply suitable sealer to the area being refinished when sealing is needed or desirable. (HP-I)(4.B.17)(EDS02 module 4 REF03 module 4)
24. The student will be able to scuff sand to remove nibs or imperfections from a sealer. (HP-I)(4.B.18)(EDS02 module 4)
25. The student will be able to apply stone chip resistant coating. (HP-G)(4.B.19)(CPS01 module 4 EDS02 module 5 REF03 module 3)
26. The student will be able to restore corrosion-resistant coatings, caulking, and seam sealers to repaired areas. (HP-I)(4.B.20)(CPS01 modules 3,4 EDS02 modules 4,5 REF02 module 5)
27. The student will be able to prepare adjacent panels for blending. (HP-I)(4.B.21)(EDS02 module 5 REF02 modules 4,5)
28. The student will be able to identify the types of rigid, semi-rigid or flexible plastic parts to be refinished; determine the materials, preparation, and refinishing procedures. (HP-I)(4.B.22)(EDS02 module 5 REF02 module 4)
29. The student will be able to identify aluminum parts to be refinished; determine the materials, preparation, and refinishing procedures. (HP-G)(4.B.23)(EDS02 module 4 REF02 modules 1,4)

The student will be able to identify the process to clean and prepare a substrate for paint
(Linked External Standards 4.B Surface Preparation)

30. The student will be able to soap and water wash entire vehicle; use appropriate cleaner to remove contaminants. (HP-I) (4.B.2)(EDS02 module 3 REF02 module 1 REF04 module 1)
31. The student will be able to remove dust from area to be refinished, including cracks or moldings of adjacent areas. (HP-I) (4.B.14)(EDS02 module 3 REF02 module 4 REF03 modules 3,4)
32. The student will be able to clean area to be refinished using a final cleaning solution. (HP-I) (4.B.15)(EDS02 module 3 REF03 module 3)
33. The student will be able to remove, with a tack rag, any dust or lint particles from the area to be refinished. (HP-I) (4.B.16)(EDS02 module 5 REF02 modules 3,4 REF03 module 4)

The student will be able to distinguish between the properties, uses and manufacturer specifications of metal treatments and primers

(Linked External Standards 4.B Surface Preparation)

34. The student will be able to inspect and identify substrate, type of finish, surface condition, and film thickness; develop and document a plan for refinishing using a total product system. (HP-I) (4.B.3)(DAM v.2.4 module 3 DAM01 v.2.5 module 4 EDS02 module 1)
35. The student will be able to apply suitable metal treatment or primer in accordance with total product systems. (HP-I) (4.B.7)(CPS01 module 3 EDS02 module 4 REF02 module 4)
36. The student will be able to mix primer, primer-surfacer or primer-sealer. (HP-I) (4.B.9)(EDS02 module 4 REF01 module 5 REF02 module 4 REF03 module 4)
37. The student will be able to apply primer onto surface of repaired area. (HP-I) (4.B.10)(EDS02 module 4 REF02 module 4)
38. The student will be able to apply two-component finishing filler to minor surface imperfections. (HP-I) (4.B.11)(EDS01 module 3 STS01 module 2)

39. The student will be able to clean area to be refinished using a final cleaning solution. (HP-I) (4.B.15)(EDS02 module 3 REF03 module 3)
40. The student will be able to restore corrosion-resistant coatings, caulking, and seam sealers to repaired areas. (HP-I) (4.B.20)(CPS01 modules 3,4 EDS02 modules 4,5 REF02 module 5)
41. The student will be able to identify aluminum parts to be refinished; determine the materials, preparation, and refinishing procedures. (HP-G) (4.B.23)(EDS02 module 4 REF02 modules 1,4)

The student will be able to distinguish among the various types of spray guns and equipment

(Linked External Standards 4.C Spray Gun and Related Equipment Operation)

42. The student will be able to inspect, clean, and determine condition of spray guns and related equipment (air hoses, regulators, air lines, air source, and spray environment). (HP-I)(4.C.1)(EDS02 module 2 REF module 1)
43. The student will be able to check and adjust spray gun operation for HVLP (high volume, low pressure) or LVLP (low volume, low pressure) guns. (HP-I)(4.C.2)(EDS02 module 2 REF module 1 REF02 module 3)
44. The student will be able to set-up (fluid needle, nozzle, and cap), adjust, and test spray gun using fluid, air, and pattern control valves. (HP-I)(4.C.3)(EDS02 module 2 REF module 1 REF02 module 3)

The student will be able to explore various paint codes and specifications for use

(Linked External Standards 4.D Paint Mixing, Matching, and Applying)

45. The student will be able to determine type and color of paint already on vehicle by manufacturer s vehicle information label. (HP-I)(4.D.1)(DAM01 module 4 EDS02 module 3 REF03 module 1)
46. The student will be able to identify and mix paint using a formula. (HP-G)(4.D.11)(EDS02 module 4 REF01 module 5)
47. The student will be able to identify poor hiding colors; determine necessary action. (HP-G)(4.D.12)(EDS02 module 6 REF03 module 3)
48. The student will be able to identify alternative color formula to achieve a blendable match. (HP-G)(4.D.14)(REF03 module 2)

The student will be able to identify the various paint systems

(Linked External Standards 4.D Paint Mixing, Matching, and Applying)

49. The student will be able to determine type and color of paint already on vehicle by manufacturer s vehicle Information label (HP-I)(4.D.1)(DAM01 module 4 EDS02 module 3 REF03 module 1)
50. The student will be able to apply single stage topcoat. (HP-I)(4.D.5)(EDS02 module 5 REF03 module 4)
51. The student will be able to apply basecoat/clearcoat for panel blending or partial refinishing. (HP-I)(4.D.6)(EDS02 module 5 REF03 modules 3,4)
52. The student will be able to apply basecoat/clearcoat for overall refinishing. (HP-G)(4.D.7)(EDS02 module 5 REF03 module 4)
53. The student will be able to apply multi-stage coats for panel blending or overall refinishing. (HP-G)(4.D.10)(EDS02 module 5 REF03 module 4)
54. The student will be able to identify and mix paint using a formula. (HP-G)(4.D.11)(EDS02 module 4 REF01 module 5)

55. The student will be able to identify alternative color formula to achieve a blendable match. (HP-G)(4.D.14)(REF03 module 2)

The student will be able to explore the types of paint defects

(Linked External Standards 4.E Paint Defects - Causes and Cures)

56. The student will be able to identify blistering (rising of the paint surface); determine the cause(s) and correct the condition. (HP-G)(4.E.1)(EDS02 module 6 REF03 module 3)
57. The student will be able to identify blushing (milky or hazy formation); determine the cause(s) and correct the condition. (HP-G)(4.E.2)(EDS02 module 6)
58. The student will be able to identify a dry spray appearance in the paint surface; determine the cause(s) and correct the condition. (HP-G)(4.E.3)(EDS02 module 6 REF03 module 3)
59. The student will be able to identify the presence of fish-eyes (crater-like openings) in the finish; determine the cause(s) and correct the condition. (HP-G)(4.E.4)(EDS02 module 6 REF03 module 3)
60. The student will be able to identify lifting; determine the cause(s) and correct the condition. (HP-G)(4.E.5)(EDS02 module 6 REF03 module 3)
61. The student will be able to identify clouding (mottling and streaking in metallic finishes); determine the cause(s) and correct the condition. (HP-G)(4.E.6)(EDS02 module 6)
62. The student will be able to identify orange peel; determine the cause(s) and correct the condition. (HP-I) (4.E.7)(EDS02 module 6 REF03 module 3 REF04 module 2)
63. The student will be able to identify overspray; determine the cause(s) and correct the condition. (HP-G) (4.E.8)(DAM01 v.2.4 module 3 DAM01v.2.5 module 4 EDS02 module 6 REF04 module 2)
64. The student will be able to identify solvent popping in freshly painted surface; determine the cause(s) and correct the condition. (HP-G)(4.E.9)(EDS02 module 6 REF03 module 3)
65. The student will be able to identify sags and runs in paint surface; determine the cause(s) and correct the condition. (HP-G)(4.E.10)(EDS02 module 6 REF03 module 3 REF04 module 2)
66. The student will be able to identify sanding marks (sandscratch swelling); determine the cause(s) and correct the condition. (HP-G)(4.E.11)(DAM01 v.2.4 module 3 DAM01v.2.5 module 4 EDS02 module 6 REF03 module 3 REF04 module 2)
67. The student will be able to identify contour mapping (shrinking and splitting) while finish is drying; determine the cause(s) and correct the condition. (HP-G)(4.E.12)(EDS02 module 6REF02 module 1)
68. The student will be able to identify color difference (off-shade); determine the cause(s) and correct the condition. (HP-G)(4.E.13)(EDS02 module 6REF03 module 1)
69. The student will be able to identify tape tracking; determine the cause(s) and correct the condition. (HP-G)(4.E.14)(EDS02 module 6 REF03 module 3)
70. The student will be able to identify low gloss condition; determine the cause(s) and correct the condition. (HP-G)(4.E.15)(EDS02 module 6 REF03 module 3REF04 module 2)
71. The student will be able to identify poor adhesion; determine the cause(s) and correct the condition. (HP-G)(4.E.16)(EDS02 module 6 REF03 module 3)
72. The student will be able to identify paint cracking (crowsfeet or line-checking, micro-checking, etc.); determine the cause(s) and correct the condition. (HP-G)(4.E.17)(EDS02 module 6)
73. The student will be able to identify corrosion; determine the cause(s) and correct the condition. (HP-G)(4.E.18) (EDS02 module 6 REF02 module 3 REF03 module 3)

74. The student will be able to identify dirt or dust in the paint surface; determine the cause(s) and correct the condition. (HP-I)(4.E.19)(DAM01 v.2.4 module 3 DAM01v.2.5 module 4 EDS02 module 6 REF03 module 3 REF04 modules 1,2)
75. The student will be able to identify water spotting; determine the cause(s) and correct the condition. (HP-G)(4.E.20)(REF04 module 2)
76. The student will be able to identify finish damage caused by bird droppings, tree sap, and other natural causes; correct the condition. (HP-G)(4.E.21)(DAM01 v.2.4 module 3 DAM01v.2.5 module 5 REF04 module 2)
77. The student will be able to identify finish damage caused by airborne contaminants (acids, soot, rail dust, and other industrial-related causes); correct the condition. (HP-G)(4.E.22)(DAM01 v.2.4 module 3 DAM01v.2.5 module 5 REF04 module 2)
78. The student will be able to identify die-back conditions (dulling of the paint film showing haziness); determine the cause(s) and correct the condition. (HP-G)(4.E.23)(EDS02 module 6 REF03 module 3)
79. The student will be able to identify chalking (oxidation); determine the cause(s) and correct the condition. (HP-G) (4.E.24)(EDS02 module 6)
80. The student will be able to identify bleed-through (staining); determine the cause(s) and correct the condition. (HP-G)(4.E.25)(EDS02 module 6)
81. The student will be able to identify pin-holing; determine the cause(s) and correct the condition. (HP-G) (4.E.26)(EDS02 module 6)
82. The student will be able to identify buffing-related imperfections (swirl marks, wheel burns); correct the condition. (HP-G)(4.E.27)(REF04 module 2)
83. The student will be able to identify pigment flotation (color change through film build); determine the cause(s) and correct the condition. (HP-G)(4.E.28)(EDS02 module 6 REF03 module 3)
84. The student will be able to measure mil thickness. (HP-I)(4.E.29)(EDS02 module 3REF02 module 1 REF04 module 1)

The student will be able to distinguish between damage and non-damage related corrosion

(Linked External Standards 4.E Paint Defects - Causes and Cures)

85. The student will be able to identify blistering (raising of the paint surface); determine the cause(s) and correct the condition. (HP-G) (4.E.1)(EDS02 module 6 REF03 module 3)
86. The student will be able to identify low gloss condition; determine the cause(s) and correct the condition. (HP-G)(4.E.15)(EDS02 module 6 REF03 module 3REF04 module 2)
87. The student will be able to identify corrosion; determine the cause(s) and correct the condition. (HP-G)(4.E.18) (EDS02 module 6 REF02 module 3 REF03 module 3)
88. The student will be able to identify water spotting; determine the cause(s) and correct the condition. (HP-G) (4.E.20)(REF04 module 2)
89. The student will be able to identify finish damage caused by airborne contaminants (acids, soot, rail dust, and other industrial-related causes); correct the condition. (HP-G)(4.E.22)(DAM01 v.2.4 module 3 DAM01v.2.5 module 5 REF04 module 2)
90. The student will be able to identify chalking (oxidation); determine the cause(s) and correct the condition. (HP-G) (4.E.24)(EDS02 module 6)

The student will be able to identify final detail procedures

(Linked External Standards 4.F Final Detail)

91. The student will be able to apply decals, transfers, tapes, woodgrains, pinstripes (painted and taped), etc. (HP-G) (4.F.1)(TRM01 module 4)
92. The student will be able to buff and polish finish to remove defects as required. (HP-I)(4.F.2)(REF04 module 2)
93. The student will be able to clean interior, exterior, and glass. (HP-I)(4.F.3)(REF03 module 3)
94. The student will be able to clean body openings (door jambs and edges, etc.). (HP-I)(4.F.4)(REF04 module 3)
95. The student will be able to remove overspray. (HP-I)(4.F.5)(EDS01 module 6 REF04 module 2)

ASSESSMENT OF LEARNER OUTCOMES:

Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

Attendance: Attendance will be in accordance with the certifying agency's requirements.

SPECIAL NOTES:

Safety: Attendance is critical throughout the safety instructions and quizzes. Students must complete all of the safety training before the student can advance or go on to the next course.

Caveats:

1. Safety glasses with side shields are required to be worn during lab activities for this course. This is in compliance with accepted eye protection practices and Kansas State Law (K.S.A. 72-5207). Safety glasses must meet American National Standards Institute Z87.1 specifications. (NOTE: Most prescription eyewear does not meet ANSI Z87.1. Students who wear prescription glasses must: a) Provide evidence that existing eyewear meets ANSI Z87.1, or b) Wear cover goggles (if allowable), or c) Purchase and wear ANSI Z87.1 prescription eyewear.
2. Lab Guidelines: In order to assist with the safe and efficient operation of the automotive lab area, students are expected to be familiar with and adhere to the Automotive Student Lab Guidelines.

This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student's progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed

to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college's policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center in Rm. 3354 or call at: 288-7670 V/TDD.

All enrolled students at Kansas City Kansas Community College are subject to follow all rules, conditions, policies and procedures as described in both the Student Code of Conduct as well as the Student Handbook. All Students are expected to review both of these documents and to understand their responsibilities with regard to academic conduct and policies. The Student Code of Conduct and the Student Handbook can be found on the KCKCC website.

