

Minnesota State College Southeast

ABCT 1345: Structural Repair

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: *.*

Lab Hours/Week: 6

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This structural course focuses on preparing vehicles for structural straightening and parts replacement. Vehicle anchoring systems are used to hold the vehicle for pulling procedures and are set-up following specifications and measuring system data. Measuring is a major emphasis in structural repairs and developing of repair plans as well as documentation of the repair process. With pulling and parts replacement completed corrosion protection and restoration is applied. Wheel alignment is a final step in the structural repair process to ensure drivability. Structural glass replacement concerns are addressed during the course as well. (Prerequisites or concurrent: ABCT1115, ABCT1125, ABCT1145, ABCT1165, ABCT1325) (3 credits: 0 lecture/3 lab)

B. COURSE EFFECTIVE DATES: 02/23/2015 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Preparation of vehicle for measuring and pulling procedures
2. Measuring and anchoring of unitized and full framed vehicles
3. Pulling of structural damage and replacement of structural parts
4. Application of corrosion protection of repaired areas of unitized body and full frames
5. Understanding of wheel alignment related to collision damage vehicles
6. Understanding of structural glass replacement procedures

D. LEARNING OUTCOMES (General)

1. Identify and demonstrate safe practices for structural repairs
2. Identify and practice vehicle protection procedures for structural repairs
3. Participate in course discussions and demonstrations
4. Prepare vehicle for structural repair procedures
5. Interpret vehicle dimension specification and perform point to point measurements
6. Utilize vehicle specifications to set-up measuring system on unitized vehicle
7. Utilize vehicle specifications to set-up measuring system on full framed vehicle
8. Properly anchor unitized and full frame vehicles for pulling procedures
9. Identify vehicle specific recommendations for straightening and service of structural parts and frame members
10. Develop pulling plan utilizing vehicle measurement, specification data, and damage analysis work sheets
11. Perform pulling and straightening procedures on unitized vehicles
12. Perform pulling and straightening procedures on full framed vehicle
13. Perform stress relieving procedures during structural repairs
14. Perform structural welding procedures using M.I.G, welding equipment
15. Perform S.T.R.S.W. equipment to perform structural parts replacement
16. Perform weld bonding procedures
17. Perform aluminum structural welds
18. Identify vehicle specific repair and replacement procedures for structural parts
19. Remove structural parts for service and replacement
20. Prepare vehicle for installation of replacement structural parts
21. Install structural parts
22. Identify suspension and wheel alignment angles related to structural damage
23. Measure alignment angles and assist in adjustments
24. Identify corrosion causes and restoration procedures of structural repairs and frame service
25. Perform corrosion restoration procedures
26. Identify and perform foam replacement procedures
27. Identify structural glass replacement procedures and properly prepare pinch weld flange for glass installation
28. Perform final inspection procedures for structural repairs
29. Demonstrate professionalism
30. Complete required course paperwork, quizzes, and test

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted