

Minnesota State College Southeast

ABCT 1320: Structural Repairs

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 1

Lab Hours/Week: 6

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Straightening and repair of unibody structures and full frame vehicles involved in a major collision are the objectives of this course. Included topics are: measuring systems and procedures, vehicle anchoring, pulling theories and application, replacement of structural panels and glass, unibody sectioning, and other related topics. Wheel alignment angles and alignment procedures are included with hands-on application. (Prerequisites: ABCT1113, ABCT1120, ABCT1130, and ABCT1260 or permission of instructor) (4 Credits: 1 lec/3 lab)

B. COURSE EFFECTIVE DATES: 04/27/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Disassembly, three dimensional measuring set-up and vehicle anchoring procedures
2. Repairs and replacements of structural members on late model unitized vehicle
3. Corrosion protection and restoration procedures for structural repair procedures
4. Reassembly of vehicle including final inspection and drivability

D. LEARNING OUTCOMES (General)

1. Identify professional and safe structural repair procedures
2. Identify professional and safe alignment procedures
3. Demonstrate professional and safe procedures
4. Participate in shop clean up
5. Perform body repair equipment maintenance
6. Define frame and unibody damage types
7. Identify frame and unibody damage types
8. Develop structural damage analysis procedures
9. Identify frame and unibody damage
10. Interpret frame and unibody dimension specifications
11. Demonstrate knowledge of three dimensional measuring
12. Demonstrate use of self centering frame gauges and tram bar gauging
13. Demonstrate use of mechanical three dimensional measuring system
14. Use computerized measuring system
15. Measure full frame and unibody vehicle
16. Diagnose unibody structural damage
17. Diagnose full frame damage
18. Identify vehicle anchoring methods
19. Anchor full frame and unibody vehicles
20. Prepare vehicle for straightening
21. Repair full frame and unibody structural damage
22. Perform structural stress relieving procedures
23. Identify unibody structural parts replacement methods
24. Perform spot weld removal procedures
25. Perform unibody structural parts replacement methods
26. Perform structural welds
27. Perform body panel alignment procedures
28. Identify corrosion restoration and protection procedures
29. Restore corrosion protection
30. Identify structural glass removal methods
31. Identify structural glass installation methods
32. Perform structural glass removal and installation methods
33. Identify suspension components
34. Explain how to diagnose damaged suspension components
35. Explain how to identify worn suspension components
36. Identify wheel alignment problems
37. Define wheel alignment angles
38. Identify alignment procedures
39. Perform prealignment inspection
40. Perform alignment procedures
41. Adjust wheel alignment angles
42. Perform road test
43. Complete written tests

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted