

MODULE MEC3140: DRIVE TRAIN REPAIR**Level:** Advanced**Theme:** Guidance and Control Systems**Prerequisite:** MEC2130 Drive Trains**Module Description:** Students perform overhauls on clutch, transmission and differential assemblies.**Module Parameters:** Access to specialized drive train tools, drive train units and related resources.**Supporting Module:** MEC2140 Transmissions/Transaxles**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> demonstrate established safe work practices, and follow established lab procedures 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> observed performance related to: <ul style="list-style-type: none"> safe practices when servicing/repairing drive train components. <p><i>Assessment Tool</i> <i>Assessment Checklist: Health and Safety, MECH&S</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	10
<ul style="list-style-type: none"> replace a clutch assembly 	<ul style="list-style-type: none"> measured performance related to clutch: <ul style="list-style-type: none"> following shop procedures following procedures in shop manuals accuracy and quality of clutch repairs/replacement work. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Drive Train Repair, Part 1, MEC3140-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	15
<ul style="list-style-type: none"> remove, overhaul and replace a manual transmission/transaxle 	<ul style="list-style-type: none"> observed performance related to: <ul style="list-style-type: none"> following shop procedures following procedures in shop manuals accuracy and quality of transmission repairs/replacement work. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Drive Train Repair, Part 2, MEC3140-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	35

MODULE MEC3140: DRIVE TRAIN REPAIR (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • measure and adjust a differential assembly • overhaul a drive axle assembly • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • observed performance related to: <ul style="list-style-type: none"> – finding and following manufacturer’s specifications – accurate measurements – accurate adjustments to differentials – information retrieval. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Drive Train Repair, Part 3, MEC3140–1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p> <ul style="list-style-type: none"> • measured performance related to drive axles: <ul style="list-style-type: none"> – following shop procedures – accurate removal and overhaul of parts including constant velocity (CV) joints. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Drive Train Repair, Part 4, MEC3140–1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>15</p> <p>25</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Health/Safety Hazards	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • demonstrate knowledge of and follow established lab procedures. 	Refer to asbestos hazards.

MODULE MEC3140: DRIVE TRAIN REPAIR (continued)

Concept	Specific Learner Expectations	Notes
Identification/ Function	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • explain the operation and power flow in various transmissions and transaxles • describe drive axle operation and components of four-wheel, front-wheel and rear-wheel drive vehicles • describe types of differential assemblies and explain operation of the following: <ul style="list-style-type: none"> – full floating – semi-floating – hunting – non-hunting • describe the operation of a limited slip differential assembly. 	
Inspect/Service and Repair	<ul style="list-style-type: none"> • remove and replace a clutch assembly • identify the serviceability of each part • adjust linkage to specified clearance • remove and replace specified transmission and overhaul to manufacturer's specifications • overhaul constant velocity joints • measure and adjust a differential assembly. 	
Careers	<ul style="list-style-type: none"> • identify further education, working conditions and career opportunities. 	