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| 1. Module details | |
| Module name | Chainsaw Operations for the Electrical Environment (Level 1) |
| Module duration | It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 36 – 40 hours. |
| Module code | NUE262 |
| Discipline code | 0703130 |
| 2. Module purpose | To enable participants with basic skills and knowledge to use and maintain a chainsaw safely. |
| 3. Prerequisites | NBB002 Occupational Health and Safety. NUE258 First Aid. |
| 4. Relationship to competency standards | NES101, NES450, NES604, RUH HRT222 |
| 5. Content | <p>Regulations and specifications</p> <p>Safety equipment</p> <p>Components identification</p> <p>Maintenance of chainsaw</p> <p>Chainsaw Operation</p> |
| 6. Assessment strategy | |
| Assessment methods | Practical exercises, oral and/or written testing as required. Assessment in field, workshop and classroom |
| Conditions of assessment | Participants must be provided with chainsaw to service and prepare for use. Chainsaw must be used under supervised conditions, appropriate safety apparel to be worn Practical exercises, oral and/or written testing |

7. Learning outcome details

Learning outcome 1

Identify specifications applicable to the operation of chainsaws.

Assessment criteria

- 1.1 Using the following resources the participant must explain: AS2726 and 2727; Owner Manuals.
- 1.2 Identify all appropriate safety equipment.

Learning outcome 2

Identify State and Federal legislation, codes of practices and environmental impact reduction practices applicable to the operation of chainsaws.

Assessment criteria

- 2.1 Identify legislation applicable to the operation of chainsaws, forest operations and falling sites.
- 2.2 Identify codes of practice applicable to the operation of chainsaws, forest operations and falling sites.
- 2.3 Identify environmental impact reduction practices applied to the use of chainsaws in forest operations and falling sites.

Learning outcome 3

Identify a chainsaw's components, function and the operating principles of chainsaw engines.

Assessment criteria

- 3.1 Identify the major components of a chainsaw.
- 3.2 Identify the major safety components of a chainsaw.
- 3.3 Identify the function of each major component.
- 3.4 Identify the two stroke engine's cycle of operation.
- 3.5 Identify the external features of a two stroke engine.
- 3.6 Identify the four stroke engine's cycle of operation.

Learning outcome 4

Assessment criteria

Demonstrate basic chainsaw maintenance.

- 4.1 Determine the manufacturer's recommended petrol and oil types.
- 4.2 Prepare petrol/oil mixes for chainsaws.
- 4.3 Identify workshop fuel, fire and storage hazards.
- 4.4 Use manufacturer's recommended procedures and schedules for cleaning a chainsaw and servicing a chainsaw.
- 4.5 Demonstrate the manufacturer's lubricating procedures for the chain and bar.
- 4.6 Service and replace oil and fuel filter to manufacturer's specifications.
- 4.7 Identify, diagnose faults, service and change spark plugs.
- 4.8 Identify operations precautions for electronic ignition systems.
- 4.9 Adjust carburetor mixture controls and operational controls to meet manufacturer's specifications. (tacho & manual reg. must be supervised).
- 4.10 Check operation condition of starter cord and recoil spring and replace where required.
- 4.11 Torque nuts, bolts and screws using appropriate procedures and torque values.
- 4.12 Check the operation of chain drive clutch.
- 4.13 Identify the correct procedures for the transporting and storage of chainsaws.
- 4.14 Prepare a chainsaw spare parts and consumable kit for use in the workplace.
- 4.15 Collect, store, transport away from site and dispose of waste materials, generated by chainsaw maintenance, as per enterprise guidelines.

Learning outcome 5

Demonstrate maintenance of chainsaw chain, sprocket and bar.

Assessment criteria

- 5.1 Identify chain types, components and the component functions.
- 5.2 Determine chain faults.
- 5.3 Demonstrate chain repair procedures.
- 5.4 Demonstrate chain lubricating and tensioning procedures.
- 5.5 Demonstrate new chain fitting and running-in procedures.
- 5.6 Demonstrate chain sharpening procedures.
- 5.7 Identify chain drive sprockets, purpose and sprocket pitch.
- 5.8 Service a chain drive sprocket.
- 5.9 Identify guide bar types, purpose and maintenance procedures.
- 5.10 Maintain guide bars.

Learning outcome 6

Identify and demonstrate safety responsibilities of chainsaw operators.

Assessment criteria

- 6.1 Identify the Codes of Practice safety requirements for the operation of chainsaws.
- 6.2 Demonstrate the application of Codes of Practice in the workplace.
- 6.3 Identify personal safety clothing and equipment required when operating a chainsaw at a work site.
- 6.4 Demonstrate the use of personal safety equipment and clothing when operating chainsaws.
- 6.5 Identify work related injuries and appropriate injury avoidance strategies.
- 6.6 Identify work site kick back hazards.
- 6.7 Identify chainsaw to suit the work site requirements.

Learning outcome 7

Demonstrate the use of tools and equipment required at a falling work site.

Assessment criteria

- 7.1 Identify the function, operation and safety procedures for each item.
- 7.2 Inspect tools and equipment for safe and functional working conditions.
- 7.3 Demonstrate correct use of tools and equipment.

Note Tools and equipment may include wedges, axe, sledge hammer, fuel and oil containers, hooks, tongs, pickeroon, loggers tape, belt and holsters, scissors, cant hook, screwdriver, combination spanner, pliers, falling bar, falling bench.

Learning outcome 8

Demonstrate chainsaw starting procedures.

Assessment criteria

- 8.1 Start chainsaw on ground with controls in appropriate position.
- 8.2 Demonstrate cold/hot start.
- 8.3 Adjust mixture screws if necessary (tacho & manual reg. must be supervised).
- 8.4 Check chain brake functioning.
- 8.5 Adjust chain tension if required.
- 8.6 Chainsaw must be held by approved method.
- 8.7 Compression and tension in timber identified.
- 8.8 Chain kick back potential realised.
- 8.9 Chain must feed easily into timber producing large chips.
- 8.10 Chain shall remain clear from soil or other obstacles.
- 8.11 Chain brake applied between cuts.
- 8.12 Stop on completion.

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| Learning outcome 9 | Demonstrate basic chainsaw cuts and trimming operations. |
| Assessment criteria | <p>9.1 Cross cut a horizontal log.</p> <p>9.2 Boring cut across the log grain.</p> <p>9.3 Coring cut along the log grain.</p> <p>9.4 Ripping cut along the log grain.</p> <p>9.5 Butt trim a log.</p> <p>9.6 Cut logs for product quality.</p> <p>9.7 Identify precautions and techniques for each type of cut.</p> |
| 8. Delivery of the module | <p>Participants shall attend classroom sessions or field work prior to on-the-job-training</p> <p>OH&S regulations must be adhered to</p> |
| References | <p><i>Chainsaw Safety Manual</i>, Stihl, Postfach 1771, D – 7050 Waiblingen, Germany</p> <p><i>Chainsaw Safety Requirements</i>, Australian AS2726 – 1984, Standards Australia</p> <p><i>Chainsaw – Guide to Safe Working Practices</i>, Australian Standard AS2727 –1984, Standards Australia</p> <p>Safety in Forestry, known as the <i>SDAA Forest Safety Code</i>, Australian Standard AS3574 –1988, Standards Australia</p> <p><i>Tasmanian Forest Safety Manual</i>, Government Printer, Tas, 1981</p> <p><i>Work Technique for Chainsaw Users</i>, national Forest Industries Training Council, Nunawading, Vic. 1990</p> <p><i>Chainsaw Manual</i>, British Forestry Commission, UK, 231 Corstorphine Rd. Edinburgh, EH 12 7AT</p> <p><i>Chainsaw Operator’s Handbook</i>, Forest Commission, NSW, 1985</p> |

Resource requirements

- Appropriate field sites
- Adequate timber
- Maintenance tools and equipment
- Trainers must hold level 2 Chainsaw Certificate or equivalent
- Safety equipment
- Protective clothing
- First Aid kit

Occupational health and safety requirements

- A level 2 First Aid Officer must be available
- All OH & S legal and regulatory requirements must be observed