



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FPIFGM3213 Fall trees manually (advanced)**

**Release: 1**

## **FPIFGM3213 Fall trees manually (advanced)**

### **Modification History**

| <b>Version</b> | <b>Detail</b>                                            |
|----------------|----------------------------------------------------------|
| 1              | Unit replaces FPIFGM3205A Fall trees manually (advanced) |

### **Unit Descriptor**

This unit describes the outcomes required to assess, plan and safely carry out manual tree-felling operations using a chainsaw in a non-production environment. The unit covers the procedures for felling trees of any size, species and condition that the faller has deemed safe to fell.

### **Application of the Unit**

This unit involves felling trees in a non-production environment, including forest, rural and community environments.

These skills and knowledge are to be used within the scope of the person's job and authority.

### **Licensing/Regulatory Information**

Licensing, legislative, regulatory or certification requirements may apply in various jurisdictions.

### **Pre-Requisites**

Not Applicable

### **Employability Skills Information**

This unit contains employability skills

## Elements and Performance Criteria Pre-Content

**Elements describe the essential outcomes of a unit of competency**

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

| ELEMENT                                             | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Prepare for felling                              | <p>1.1 Identify and comply with <b>applicable occupational health and safety</b> (OHS), environmental, <b>legislative</b> and <b>organisational requirements</b> relevant to felling trees</p> <p>1.2 Identify and adhere to site <b>environmental protection measures</b> according to relevant legislation and regulations</p> <p>1.3 Review <b>job requirements</b> and check as required with <b>appropriate personnel</b></p> <p>1.4 Select <b>tools and equipment</b> appropriate to work requirements and check them for operational effectiveness according to manufacturer recommendations</p> <p>1.5 Sharpen and adjust chainsaw or change components according to manufacturer recommendations</p> <p>1.6 Identify and control potential and existing risks and <b>hazards</b> in the work area</p> <p>1.7 Identify trees to be felled as being safe to fell</p> <p>1.8 Assess and progressively plan tree-felling sequence for individual trees</p> <p>1.9 Establish and maintain <b>communication</b> with others according to OHS requirements</p> |
| 2. Visually assess site conditions and surroundings | <p>2.1 Identify and comply with site environmental concerns according to relevant federal, state or territory legislation and local regulations</p> <p>2.2 Review terrain and slope to determine if they add significant complexity to the operation</p> <p>2.3 Maintain awareness of <b>environmental conditions</b> and other personnel activity in the work area and modify felling activity where required</p> <p>2.4 Assess general factors affecting felling requirements and detect and control specific forest or site risks and hazards</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Assess tree and plan felling                     | <p>3.1 Locate and visually assess tree for felling characteristics</p> <p>3.2 Assess and check required falling direction and possible deviation</p> <p>3.3 Plan sequence of cuts to fell tree according to standard</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| ELEMENT                          | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. Apply tree-felling techniques | <p>felling procedures</p> <p>3.4 Identify <b>limitations</b> in own skills in safely felling trees, assess <b>trees considered outside own skill</b> level and seek assistance from appropriate personnel where required</p> <p>3.5 Monitor and exclude location and activity of other personnel on the work site</p> <p>4.1 Select suitable escape route and clear it of growth and other obstacles according to environmental care principles and statutory requirements</p> <p>4.2 Fell individual trees using planned <b>techniques</b> according to site requirements, at a safe distance from other personnel in the work area</p> <p>4.3 Adjust cutting technique in response to movement and condition of tree</p> <p>4.4 Use planned escape route when tree starts to fall and monitor the fall and movement of tree on ground until determined stable</p> <p>4.5 Identify procedures for removal of trees that are hung-up</p> <p>4.6 Detect, rectify and report blunt or damaged saw chain according to workplace procedures</p> <p>4.7 Monitor chainsaw for operational effectiveness and record and report faults, malfunctions and problems according to workplace procedures</p> |

## Required Skills and Knowledge

### Required skills:

- Technical skills to:
  - use and maintain relevant tools and equipment
  - safely operate and maintain a chainsaw
  - assess, plan and carry out tree-felling operations appropriate to site conditions
- Communication skills to:
  - use appropriate communication and interpersonal techniques and methods with colleagues and others
  - use hand signals with other operators to maintain effective and safe tree felling
- Literacy skills to:
  - locate and report information
  - interpret, apply and convey information in written, diagrammatic and/or verbal form
- Numeracy skills to:
  - estimate tree height
  - calculate product mass and determine tree fall zone
  - measure tree length and diameter
- Problem-solving skills to:
  - review and identify work requirements
  - recognise own limitations in conditions and trees for felling
  - identify problems and equipment faults and demonstrate appropriate response procedures
  - apply safe work practices, including using personal protective equipment (PPE) and controlling hazards
  - comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for felling trees manually
- Planning and organising skills to work to site requirements

### Required knowledge:

- Basic knowledge of applicable federal, state or territory legislation, regulations, standards and codes of practice relevant to the full range of processes for felling trees manually
- Environmental protection requirements, including the safe disposal of waste material
- Organisational and site standards, requirements, policies and procedures for felling trees manually
- Types of tools and equipment for felling trees manually, and the procedures for their safe use, operation and maintenance
- Problem identification and resolution strategies and common fault-finding techniques

- Established communication channels and protocols
- Procedures for identifying and evaluating structural defects in trees
- Types and purposes of a range of cuts to fell trees
- Operational principles and limitations of a chainsaw
- Procedures for recording and reporting workplace information
- Fire protocols
- Chainsaw product specifications

## Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

### Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can assess, plan and safely and efficiently operate chainsaw equipment to manually fell trees at an advanced level in a forest environment

### Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements of this unit and include demonstration of:

- compliance with applicable federal, state or territory legislative and regulatory requirements and codes of practice relevant to felling trees manually at an advanced level
- compliance with applicable licensing or certification requirements relevant to felling trees manually at an advanced level
- effective communication and safe working practices, including maintaining an awareness of other personnel activity in the work area
- Identifying and describe key features of structural defects and stresses in trees and the impact on
  - conducting a tree assessment, and planning and undertaking advanced tree felling within the range of variables for trees and conditions
  - planning felling sequence for individual trees and preparing surroundings including escape route
- felling a range of advanced trees using a range of cuts safely without damage to personnel, equipment and surrounding environment
- selecting, preparing and maintaining appropriate tools and equipment and recognising faults, problems and malfunctions

### Context of and specific resources for assessment

- Competency is to be assessed in the workplace or a realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context

- Assessment is to comply with relevant regulatory requirements and Australian standards
- The following resources should be made available:
  - workplace location or simulated workplace
  - materials and equipment relevant to undertaking work applicable to this unit
  - specifications and work instructions

**Method of assessment**

- Assessment methods must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access, interpret and apply the essential underpinning knowledge
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

## Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below.

- OHS requirements:**
- are to be in accordance with applicable federal, state or territory legislation and regulations, and organisational safety policies and procedures, and may include:
    - PPE and clothing
    - safety equipment
    - first aid equipment
    - firefighting equipment
    - hazard and risk control
    - fatigue management
    - appropriate signage
    - elimination of hazardous materials and substances
    - safe forest practices, including required actions relating to fire
    - techniques for manual handling, including shifting, lifting and carrying
- Legislative requirements:**
- are to be in accordance with applicable federal, state or territory legislation, regulations, certification requirements and codes of practice and may include:
    - award and organisational agreements
    - industrial relations
    - Australian standards
    - confidentiality and privacy
    - OHS
    - the environment
    - native vegetation
    - equal employment opportunity
    - anti-discrimination
    - relevant industry codes of practice
    - duty of care
    - heritage and traditional landowner issues
- Organisational**
- legal compliance documentation

**requirements** may include:

- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality and continuous improvement processes and standards
- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements
- equipment use, maintenance and storage requirements
- environmental management requirements, including waste disposal, recycling and re-use guidelines

**Trees** typical to the scope of this unit may include the following characteristics:

- lean and weight distribution that adds significant complexity yet can be assessed and adapted to site requirements
- larger dimensions relative to local forest size distribution
- substantial lean
- damage or defect that requires complex felling techniques
- multi-legged, hollow butts, culls and stags
- species prone to free splitting and adverse reactions during felling
- a crown that contains dead or broken material, entanglement or malformation and presents a hazardous and difficult situation for assessment, monitoring and safe felling
- single or complex multi-stems
- diameter of tree greater than chainsaw bar length
- grown on terrain and slope that can add significant complexity to the operation

**Environmental protection measures** may include:

- action to limit the impact to:
  - native vegetation
  - soil and water
  - heritage and archeological artefacts
  - flora and fauna
  - geomorphologic features
  - landscape
  - external site pollution

- recreational opportunities
- regeneration opportunities

**Job requirements** may include:

- information and instructions relevant to tree-felling operations, including processing location details and trees to be felled and retained
- general environmental requirements
- site plan and environmental features

**Appropriate personnel** may include:

- supervisors
- clients
- colleagues
- managers

**Tools and equipment** may include:

- warning signs
- chainsaw and components
- PPE and clothing
- first aid equipment
- maintenance requirements
- support tools

**Hazards** may include:

- uneven and unstable terrain
- unsafe trees
- fires
- overhead and underground services
- excavations
- traffic
- structures
- hazardous materials
- insects and animals
- other personnel and machinery

**Communication** may include:

- verbal and non-verbal language
- hand or other agreed signals
- eye contact with other operators or personnel
- active listening and questioning to clarify and confirm understanding
- electronic communication devices

**Environmental conditions** may relate to:

- ground growth
- canopy
- general tree lean
- ground slope
- ground hazards
- wind speed and direction

**Limitations** may relate to:

- job role and responsibilities
- own competency level
- industry requirements
- own understanding of risk identification processes
- own interpretation of legislation, regulations and procedures
- complying with OHS requirements

**Trees considered outside own skill level** include:

- trees that contain hazards and are deemed unsafe
- trees where cuts made may lead to loss of control of tree in felling

**Techniques:**

will include:

- scarf cutting
- back cutting to provide hinge-wood and maintain control of tree

may include:

- use of wedges to assist in controlling falling direction

## Unit Sector(s)

Forest Growing and Management

## Competency field

**Competency field** n/a