



**Australian Government**

**Assessment Requirements for ICTOPN506  
Analyse and integrate specialised optical  
devices in the network**

**Release: 1**

# Assessment Requirements for ICTOPN506 Analyse and integrate specialised optical devices in the network

## Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

## Performance Evidence

Evidence of ability to:

- analyse a specialised optical device and prepare a design to integrate it with a network
- integrate and test the device
- document integration to the network and recommend enhancements
- submit relevant documentation to appropriate personnel
- comply with all related work health and safety (WHS) requirements and work practices.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

## Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain attenuation characteristics of optical fibres
- summarise principles of operation of dense wavelength division multiplexing (DWDM)
- describe features and operating requirements of test equipment, including:
  - a hand-held optical power meter
  - an optical spectrum analyser
  - a transmission test set
- discuss dispersion characteristics of optical fibres
- explain the role of dispersion compensation devices
- explain standard electrostatic discharge precautions
- explain functions of an optical add-drop multiplexer (OADM) and reconfigurable optical add-drop multiplexer (ROADM)
- explain gain equalisation
- summarise the International Telecommunications Union (ITU) wavelength grid for DWDM

- explain the measurement of dispersion in optical systems
- summarise optical amplifier operation
- identify optical fibre connector types and characteristics
- identify optical fibre types and characteristics
- outline optical return loss (ORL)
- explain path protection and protection switching
- clarify protocols used on optical DWDM systems
- explain the role of reflectance in optical systems
- explain ring topologies and linear network topologies
- explain specific WHS requirements that impact the safe inspection of optical connectors and the safe measurement of optical power from laser transmission systems
- describe tunable laser sources and their characteristics.

## Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the Telecommunications – Optical Networks field of work and include access to:

- test equipment currently used in industry
- manufacturer's technical documentation, legislation, codes and standards.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>