

PLI-06-010

## DWDM FIBRE CHARACTERISATION

Designed for experienced Optical technicians, this course provides the information required to confidently assess the suitability of an optical link for high bandwidth multi wavelength transmission deployment (DWDM).

# OPTICAL



PERPETUAL LEARNING INSTITUTE provides a comprehensive syllabus that addresses critical practices pertaining to Optical technologies within the Telecommunications Optical access networks

PERPETUAL  
LEARNING  
INSTITUTE is  
a Nationally  
Approved Training  
Provider of  
Telstra™ & nbn™

Contact us today  
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Attendees will be introduced to complex optical fault analysis principles using an OTDR as well as dedicated test plan development and execution using dispersion and ORL test equipment. Attendees will have the opportunity to perform live testing for all elements needed to validate high bandwidth infrastructure (+10Gb/s).



### BOOK ONLINE

Information is subject to change  
For the most current information and training schedule, please visit : [www.perpetuallearning.com.au/book](http://www.perpetuallearning.com.au/book)



### ACCREDITATIONS

Perpetual Learning Institute Pty. Ltd. is a nationally Registered Training Organisation (RTO code: 40809)

Perpetual Learning Institute Pty. Ltd is also a Nationally Approved Training Provider (ATP) of nbn™ & Telstra™



APPROVED

## COURSE OUTLINE



### PLI-06-010-A

#### Optical Theory as it Relates to Measurement Techniques

- Understanding telecommunications network architecture
- Basics of fibre optics – units of measurement
- Single mode and multimode cable principles
- Light propagation principles
- Laser transmission system theory
- Optical connectors
- Laser safety and OH&S

### PLI-06-010-B

#### Acquiring a Suitable and Accurate OTDR Trace

- Index of refraction
- Pulse width selection
- Deadzone effects on an OTDR trace
- Selecting the most suitable range and resolution setting
- OTDR trace acquisition time
- Wavelength test selection
- Practical exercises and assessment of each of the items discussed

### PLI-06-010-C

#### Evaluating OTDR Trace Elements

- OTDR trace basics
- OTDR trace elements
- Measuring OTDR trace features using an OTDR
- OTDR fault conditions – trace examples provided
- Effects of incorrect OTDR parameter setup
- Techniques for accurate fault locating
- Practical exercises and assessment of each of the items discussed

### PLI-06-010-D

#### Introduction to DWDM Link Certification

- What is DWDM and why is it used
- DWDM system components
- Data rate
- Link dispersion budgets
- Channel spacing
- C & L band DWDM and CWDM
- Optical return loss introduction to chromatic dispersion
- Introduction to polarisation modal dispersion

### PLI-06-010-E

#### Fibre Optic Validation of DWDM Circuits

- Measuring and assessing chromatic dispersion test results
- Measuring and assessing polarisation modal dispersion test results
- Totalling and compensating the effects of CD and PMD
- Infrastructure faults that cause DWDM faults
- Aligning 1625nm OTDR testing with PMD results
- Prioritisation of infrastructure for DWDM
- Future direction of xWDM

### PLI-06-010-F

#### Theory Assessment

- Theoretical assessment
- Practical assessment

## INDUSTRY PROBLEM

- With the deployment of the nbn™, Australia now needs additional skilled workers to construct the different network architectures.
- New network architectures and technologies require the development of new skills and knowledge to ensure success.



## PERPETUAL LEARNING SOLUTION

- Working as an nbn™ Approved Training Provider, PERPETUAL LEARNING INSTITUTE has enhanced our traditional courses to align directly to the skills needed for the nbn™ rollout.
- The development of carefully constructed skill based programs is where we excel – the art of training.
- Unlike other training organisations which focus primarily on technology, PERPETUAL LEARNING INSTITUTE is structured toward Field Operations staff. Technology theory is combined with large quantities of practical exercises to reinforce the learning process.
- PERPETUAL LEARNING INSTITUTE is the market leader with regards to hands on practical training that is supported by our real world learning simulators – “We bring the field

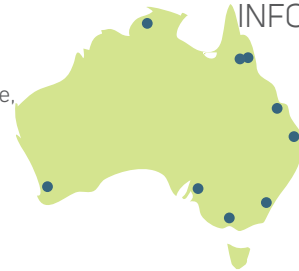


environment to you”.

## COURSE

### Course Locations:

Melbourne, Adelaide,  
Sydney, Hobart,  
Canberra,  
Cairns,  
Brisbane,  
Darwin and Perth



## INFORMATION



Location and timing will be advised at enrolment

**Class Size:** 10 - 12 students

**Duration:** 2 days

### Included:

All materials used for practical exercises, technical manuals for each attendee, test equipment, emulation environment.

1 week phone support.