

PLI-05-001

## FIBRE OPTIC TEST COMMISSIONING & REPORTING

Designed for all skill levels, this course provides all the information required to confidently operate and assess the quality of an optical fibre transmission link.

# 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™

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This course will provide a comprehensive awareness of a variety of commonly used commissioning techniques and tooling including tri-band OTDR testing. Attendees will also learn techniques to develop carrier approved commissioning reporting including nbn™ and Telstra™.



### 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



### Optical theory as it relates to Measurement Techniques

- Optical fibre safety practises
- Understanding Telecommunications network architectures including nbn™
- Basics of fibre optics - system components and measurements
- Single mode and multimode cable principles
- Light propagation principles
- Laser transmission system theory
- Fibre attenuation and its causes
- Fibre optic connectors and cleaning
- Evaluation of optical connector quality using video inspection probes

### Acquiring a Suitable and Accurate OTDR Trace

- Introduction to OTDRs and trace fundamentals
- Index of refraction
- Pulse width selection
- OTDR trace acquisition time
- Testing wavelength selection
- Selecting the most suitable range and resolution setting
- Deadzone effects on an OTDR trace
- Practical exercises and assessment of each of the items discussed

### Evaluating OTDR Trace Elements

- Key areas of an OTDR trace
- Measuring OTDR trace features
- OTDR fault conditions – diagnostics and resolution
- Effects of incorrect OTDR parameter setup
- Ghosting and gainers
- Techniques for accurate fault locating
- Practical exercises and assessment of each of the items discussed

### Evaluating overall Link Quality

- Understanding network testing thresholds
- Calculating loss / attenuation budgets
- File naming conventions and trace file formats / structure
- Measuring optical insertion loss
- Using fibre optic testing tools including - VFL, BFA, Traffic Identifier etc
- Creating a professional and accurate optic link performance report using the Telstra™ workbook and how this relates to multiman
- Creating a professional and accurate optic link performance Report using the standardised nbn™ and Telstra™ reporting workbook
- Introduction to "Networks" PC emulation software
- Practical exercises and assessment of each of the items discussed

### Introduction to DWDM Technologies

- WDM basics, bandwidth demand
- DWDM systems and components
- DWDM system operation
- Channels and transmission protocols
- DWDM fibre testing
- Optical spectral analysis
- DWDM equipment installation
- Equipment mounting, cabling and testing
- Equipment commissioning
- The future of DWDM
- Practical exercises and assessment of each of the items discussed

### Course Assessment

- Theoretical assessment
- Practical assessment

## FIBRE OPTIC TEST

### 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 INFORMATION

#### Course Locations:

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



Location and timing will be advised at enrolment

Class Size: 10 - 12 students

Duration: 3 days

#### Included:

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