



## Course Name:

## Fiber Optics Basics

### Correspondencia con Ciclos formativos de Formación Profesional:

**Fibre Optic Basics** is the first course offered by the **Corning Network IQ** education program to train students and professionals on basic knowledge and skills of Optical Communication. It combines the real-world experience of working professionals, Corning's latest technology and blended learning specialists – as well as taking into account the needs of companies employing installers and telecommunications engineers. It has been developed following instructional design guidelines that encourage both interactivity and practical learning.

### Target Audience

- **Teachers and students** of telecommunications, electricity and computer science at vocational and higher education institutions.
- **Engineers and professional installers** to update their knowledge and skills in Fiber Optics technologies.

### Objective

The main objective of the course is to provide a **comprehensive learning in basic fibre optics** so as to provide participants with the knowledge and skills base in optical communications infrastructure installation.

### Course Content Structure

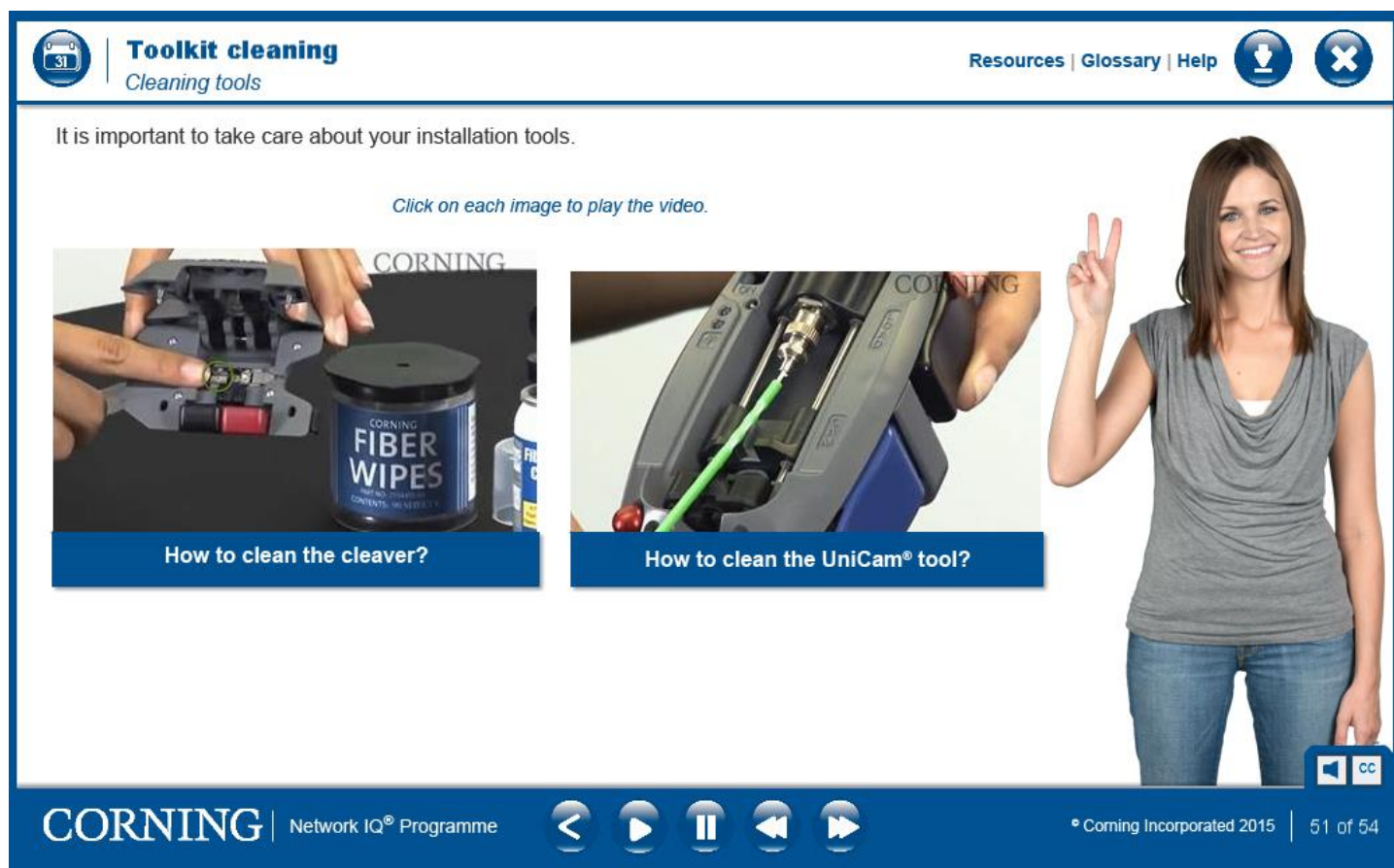
<b>Chapter 1. Fibre Basics</b>	<ul style="list-style-type: none"> <li>Introduction to fiber optics and safety instructions</li> <li>Optical fiber vs. Copper</li> <li>The making of optical fiber</li> <li>Principles of transmission</li> <li>System performance parameters</li> <li>Optical sources</li> </ul>
<b>Chapter 2. Fibre cables</b>	<ul style="list-style-type: none"> <li>Single-mode vs. Multimode transmission</li> <li>Areas of installation, applications and requirements</li> <li>Different cable designs: outdoor, indoor and indoor/outdoor cables</li> <li>Cable designations</li> <li>Cable quality testing methods</li> </ul>
<b>Chapter 3. Fibre Terminations</b>	<ul style="list-style-type: none"> <li>Fiber optic connections</li> <li>Insertion loss</li> <li>Fiber connectors and adapter modules</li> <li>Color coding of fiber components</li> <li>Preparation and termination methods</li> <li>Cleaning</li> <li>Installation accessories</li> </ul>
<b>Chapter 4. Fibre optic hardware</b>	<ul style="list-style-type: none"> <li>How to use hardware to protect fibres and splices</li> <li>Analyze the different usage alternatives</li> </ul>
<b>Chapter 5. Fibre Standards</b>	<ul style="list-style-type: none"> <li>Cabling standards worldwide, and new standards/updates</li> <li>Key standards for structured cabling</li> <li>Fiber optic classes</li> <li>Duplex system polarity</li> </ul>
<b>Chapter 6. Fibre measurements &amp; troubleshooting</b>	<ul style="list-style-type: none"> <li>Reasons for testing</li> <li>Testing standards</li> <li>Optical testing procedures and documentation</li> <li>Troubleshooting</li> </ul>

## Fiber Optics Basics

### Course DataSheet

#### Learning Content Sample

The learning content is available through TechClass.Academy "TCA Campus", the eLearning platform selected by Corning to deliver this course content. It is presented as eLearning material that can be used in different learning environments such as Classroom Instructor Led Training, individual distance learning, and blended learning. The following image is an example of how the learning content looks on screen. The learning resources are highly interactive to stimulate the course participants to get the knowledge and skills.



The screenshot shows an eLearning interface with a blue header. On the left, there is a circular icon with '31' and the text 'Toolkit cleaning' and 'Cleaning tools'. On the right, there are icons for 'Resources | Glossary | Help', a download icon, and a close icon. The main content area has a white background with the text 'It is important to take care about your installation tools.' and 'Click on each image to play the video.' Below this are two video thumbnails: 'How to clean the cleaver?' and 'How to clean the UniCam® tool?'. To the right of these thumbnails is a woman in a grey top and blue jeans making a peace sign. At the bottom, there is a blue navigation bar with the 'CORNING' logo, 'Network IQ® Programme', navigation icons, and '© Corning Incorporated 2015 | 51 of 54'.

#### Learning Outcomes

At the end of the course, students will be able to demonstrate a basic knowledge on fibre optics, including fibre cables, fibre termination methods, fibre hardware, fibre standards as well as measurement methods and troubleshooting procedures.

Upon the course completion, students will be able to:

- Design the installation depending on the context
- Carry out the installation of fibre optic
- Carry out the process of measurement and testing
- Identify troubleshootings and will be able to solve them

#### Professional opportunities

- Network installers
- Information Technology installation technician
- Cabling Specialist
- Networking Associates
- Network Designers
- System administrator
- Network maintenance technician
- Domestic telecommunications installation technician

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### Course DataSheet

#### Supplemental learning resources

- These are the supplemental learning resources available to students:
- Technical description of products
- Frequently asked questions list developed by Corning: <http://www.corning.com/opcomm/nafta/en/products/faqs.aspx> (Links to an external site.)
- Videos from Corning Youtube Channel (Links to an external site.)
- Technology examples from Corning and other companies such as FlukeToolkits and lab equipment for real practice with fibre optics

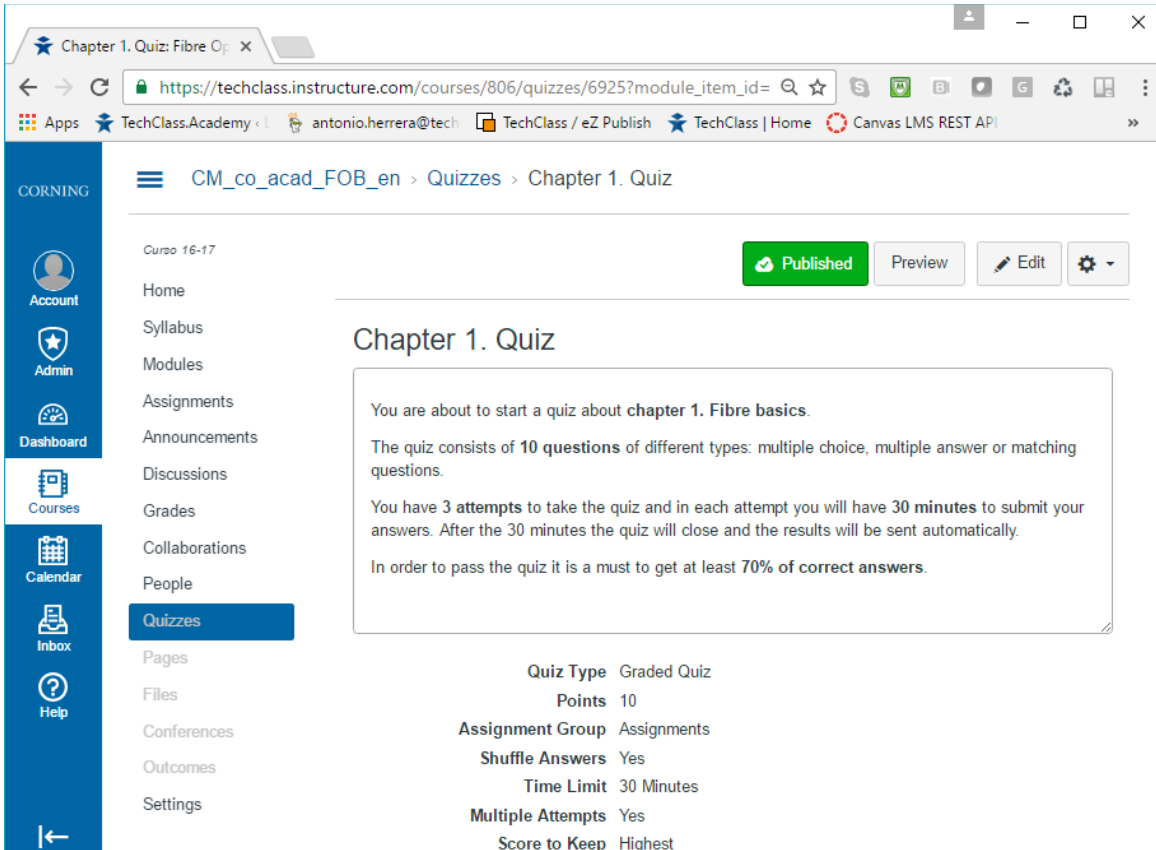
#### Assessment question banks

This course contains assessment question banks to help instructors evaluate the student progress and allow participants to self assess their achievements.

#### Practical equipment

In order to carry out the lab activities and support the learning process, the course requires the use of practical equipment. Practical equipment is offered in three versions:

- Basic Package
- Extended Package
- Full package



The screenshot shows a web browser window with the URL [https://techclass.instructure.com/courses/806/quizzes/6925?module\\_item\\_id=](https://techclass.instructure.com/courses/806/quizzes/6925?module_item_id=). The page title is "Chapter 1. Quiz: Fibre Op". The main content area displays the following text:

You are about to start a quiz about **chapter 1. Fibre basics**.

The quiz consists of **10 questions** of different types: multiple choice, multiple answer or matching questions.

You have **3 attempts** to take the quiz and in each attempt you will have **30 minutes** to submit your answers. After the 30 minutes the quiz will close and the results will be sent automatically.

In order to pass the quiz it is a must to get at least **70% of correct answers**.

Below the text is a table with quiz settings:

Quiz Type	Graded Quiz
Points	10
Assignment Group	Assignments
Shuffle Answers	Yes
Time Limit	30 Minutes
Multiple Attempts	Yes
Score to Keep	Highest

Sample assessment cover page