



## **Mastersizer 2000/2000E ELearning ELC0002**

This course is a self-paced on-line course delivered via the internet, and is designed to deliver a flexible, low cost alternative to the more traditional learning routes as well as providing a Certificate of Competence on completion.

Consisting of a series of nine modules, the course takes the user from the basics of particle size analysis through to method development and maintenance.

Each module is presented in a clear and concise manner and takes between 10 and 20 minutes to complete.

At the end of each module, a series of assessment questions allows users to gain useful feedback as they progress through the course.

### **Syllabus**

The course is arranged into the following 9 modules:

#### **Module 1: Introduction and Basic Principles.**

What is meant by the term "particle size" and how is it measured using laser diffraction?

#### **Module 2: Obtaining and Understanding the Size Distribution.**

How does the instrument produce a size distribution, what types of data does it produce and what do they tell us?

#### **Module 3: Data Quality**

Understanding how to recognise and obtain high quality data

#### **Module 4: Optical properties of sample materials**

Specification of reasonable optical properties is a necessary requirement when calculating particle size distributions from laser diffraction data. How can this be achieved in practice?

#### **Module 5: Analysis Models**

Understanding the different analysis models provided in the Mastersizer 2000 software and determining which is the most appropriate for the analysis of your samples.

#### **Module 6: Sampling**

The Mastersizer 2000 is capable of giving you measurement repeatability better than 1%. Do your sampling methods match this capability?

### **Method screening.**

The key to achieving robust method development and transfer is the establishment of a reliable method screening protocol. We have two modules covering this important subject:

#### **Module 7: Method screening – Wet measurements**

This module describes the requirements for the dispersion of samples in liquid-based dispersants.

#### **Module 8: Method screening – Dry dispersions**

This module describes the requirements for the dispersion of dry powders using a dry powder feeder.

#### **Module 9: Maintenance**

Simple maintenance procedures for keeping the Mastersizer in good working order.

## **FAQ**

### **This course is described as Level 2, what about Level 1?**

Level 1 training is the basic introductory training provided on installation. For new users of an existing installation Level 1 training would normally be attained by observing a colleague making a measurement but can be provided by Malvern Instruments on request.

### **Why should I opt for Elearning rather than the more traditional routes?**

The Elearning course can be taken at your own pace at a time of your choosing. It does not need to be completed in one sitting but over a period of time as suits your work schedule. You avoid needing to take time away from work and do not incur travel or accommodation costs.

### **What do I need to receive this training?**

- Fast internet connection, at least 128 kbps (e.g. cable/DSL broadband) or faster
- Web browser, such as Microsoft Internet Explorer v6 or Mozilla Firefox v1 or newer
- Macromedia Flash Player version 8 or later (download free from [www.adobe.com/products/flashplayer](http://www.adobe.com/products/flashplayer))
- Sound card and speakers/headphones

### **May I retake a module?**

Yes! If you did not fully understand a module or did not achieve a high mark in the test you may retake the module as often as you like.

### **Will Malvern help me to update my training records?**

Yes on completion of the course a Certificate of completion will be provided in the name of the person registered to take the course. This is suitable for inclusion in training records.

### **Do I need to pass all the modules to obtain the Certificate?**

Normally the answer is yes. However if your system only has a wet or dry accessory and not both then modules 7 or 8 may be irrelevant to you. We would still suggest it would be a good idea to complete all the modules but if you let us know that one of the modules is irrelevant we will still issue the Certificate on completion of all the other modules.