

RAIL
VEHICLE
MECHANICAL ENGINEERING
AEROSPACE
MANUFACTURING

Practically every engineering product with any degree of complexity uses threaded fasteners. Although threaded fasteners are generally considered a mature technology, significant problems exist with their use.

Bolt Science was founded in 1992 with the intention of becoming the recognised worldwide quality provider of independent technical expertise in bolted joint technology. Our clients include many of the major engineering organizations of the world.

We have been providing training on the technical aspects of bolting for more than 20 years. The training courses outlined in this brochure are online based with support via email, phone, Teams or Zoom, as needed. Our online courses can be started at any time, with all the courses having audio that can be turned off if required. Each training course has a handbook that can be downloaded and printed.

**BOLT
SCIENCE**

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**BOLT
SCIENCE**
Online Training



Online Distance Learning Courses on Bolting

Rail
Vehicle
Mechanical
Engineering
Aerospace
Manufacturing

Bolting Technology for Engineers and Designers

FOR ENGINEERS REQUIRING DETAILED TECHNICAL KNOWLEDGE ON BOLTING.

The **Bolting Technology for Engineers and Designers Online Course** is intended for engineers involved in the design and specification of bolted joints and anyone involved in failure analysis, or solving problems related to bolting. Calculation examples and exercises are included in this training and is our premier and most popular training course.



The training provides an in-depth study of the main technical aspects of bolting. The course is practical and presents methodologies for solving everyday bolting problems encountered in mechanical engineering. The course includes presentations on various topics, exercises, quizzes, and a training handbook presenting course notes, example calculations, and tables that the user can view and print out.

flexible training solutions for your business needs

The Fundamentals of Threaded Fasteners

FOR STAFF REQUIRING A GOOD UNDERSTANDING OF BOLTING AND THE PROBLEMS THAT CAN ARISE.

The **Fundamentals of Threaded Fasteners Online Course** provides detailed information on threads and bolting but does not include any calculations. Manufacturing, Field and Service Engineers would find this course useful.

Resources – Additional resources relating to the presentation

Marker Tools – Allows you to highlight parts of the presentation.

Outline – Shows a list of all the screens to aid navigation.

Notes – Provides additional information relating to the material shown on the screen.

Screen Area showing the presentation itself.

Maximise – Maximises the presentation to full screen

Navigation – Move forward or backward on the presentation

BOLT SCIENCE

Fastener Threads

The thread is a helical groove and for fastener threads it is typically based upon a vee form.

Enlarged view of the bolt thread

Introduction to Fastener Threads

NOTES

The thread is a helical groove. Fastener threads are typically based upon a vee form type of thread. Specific names are given to the various parts of the thread, the common terms are identified in the following slides. The vast majority of screw threads are right-hand threads; that is, they are screwed into a mating part by turning in a clockwise direction. A left-hand thread are sometimes used in special applications; a left-hand thread is screwed into a mating part by turning in a counter-clockwise direction. Care is needed when unscrewing a left-hand threads since a person may inadvertently be tightening it instead. Also of note is that the vast majority of threaded fasteners are single-start threads (a single continuous groove) and have a symmetrical thread profile.

Torque Tightening Best Practice Guidance

FOR ENGINEERING STAFF INVOLVED IN THE TORQUE TIGHTENING OF THREADED FASTENERS APPLICATION MANAGEMENT

The aim of the **Torque Tightening – Best Practice Online Course** this training course is to provide key knowledge as to what constitutes good practice for assemblies with torque tightened fasteners.

The failure of bolted joints occurs across most industries. Some failures are disastrous resulting in a loss of life. The frequent cause of such failures is that the fastener tightening process was inadequate in some way. With hindsight, most accidents are preventable.



In the workplace there is an obligation that a person's competence is managed in accordance with applicable legislation and standards considering best practice guidance.

The purpose of this training course is to provide advice as to what is generally regarded as best practice guidance in regard to the torque tightening of threaded fasteners.

The cost of preventing a bolting problem is always substantially less than the cost of repair and other costs.

For the specific content for any of our online training courses, see our website at:

www.boltscience.com

WHY ONLINE TRAINING

Online training has become increasingly popular in recent years, and for good reason. Here are some of the advantages of online training:

FLEXIBILITY

Our online training courses can be taken anytime, anywhere, making it easier for professionals to balance their work and personal life. This ensures flexibility in terms of time and effort.

MOBILITY

Our online courses are not only restricted to desktops; they can be accessed on phones, tablets, and laptops, making it easier for learners to take courses while on the go.



COST EFFECTIVE

Our online training courses are generally less expensive than traditional classroom courses. This is because there are no costs associated with travel, accommodation, or classroom materials. Also, there is usually a minimum number required to justify a face to face course, there is no restriction with our online courses..



SELF-PACED

Our online training courses allow learners to work at their own pace. This means that learners can take as much time as they need to understand a concept before moving on to the next one.