

Training Programme 2009



Building Acoustics

This 1 day course introduces key concepts in building acoustics. It deals with relevant recommendations, standards and regulations for **airborne and impact sound insulation and room acoustics**. These are considered in both Australian and international contexts.

The course is conducted by Dr Densil Cabrera. Densil coordinates the acoustics teaching and research at the **Faculty of Architecture in the University of Sydney**, and has also taught building acoustics in the University of NSW School of Mechanical and Manufacturing Engineering. He has conducted acoustics research projects at universities in New Zealand, Italy, Japan and Korea.

Course fee: \$650 +GST

- Standard Measurement Techniques
- Techniques Discussed
- Design Strategies
- Standards and Regulations
- Key Concepts
- Practical Demonstrations
- Material Selection
- Building Acoustics Performance
- New and Alternative Approaches
- Prediction and Modelling

Environmental Noise Training

During this 2 day course delegates will gain the practical, hands-on knowledge and confidence to accurately carry out detailed environmental noise surveys and assessments. The course will cover an update of the current legislation and will provide a good practice guide on the sources and magnitude of uncertainty arising in practical measurement of environmental noise. This pragmatic course has a minimum of mathematical theory and is ideal for noise consultants, authority officers and those who need to measure, plan or carry out compliance checks of noise.

Course fee: \$995 +GST

- Effects of noise on people
- Objectives of noise surveys
- The nature of sound with practical demonstrations
- The use of sound level meters
- Noise impact statements - Case Studies
- Statutory requirements - Codes of Practice
- Limitations and measurement uncertainty
- Noise prediction and computer modelling
- Hands-on measurements

Human Vibration Assessment

An increase in the number of hand-arm and whole-body injuries caused by vibration is the consequence of the use of modern machinery and equipment. There have been significant changes to the way vibration is assessed, particularly relating to shocks. The release of the latest Australian Standard for Whole-Body Vibration has placed renewed emphasis on vibration exposure in the workplace.

Evaluation of hand-arm and whole-body vibration involves the assessment of risk associated with exposure to vibration. During this one-day course the delegates will gain the practical, hands-on knowledge and confidence in evaluating vibration in relation to human health, interference with activities, discomfort and motion sickness.

Course fee: \$450 +GST

- Human vibration - general
- Typical sources of whole-body and hand-arm vibration
- Methodology used to evaluate risk arising from vibration
- Overview of Standards and Regulations
- Evaluation of risk and legal compliance
- Implementation of protection measures (organisational /technical)
- Requirements for equipment used to evaluate vibration exposure
- Practical session in vibration measurement, calculations and reporting

Introduction to NVH Testing

Melbourne only. This course is aimed at professionals in the automotive and transport industry whose work is related to noise control, and component vibration. It explains the role of NVH refinement in vehicle design and development processes outlining the challenges and tools available.

It also provides an in-depth introduction to measurement and experimental techniques in acoustics and vibration. Each part of a car is treated separately explaining the different noise and vibration sources and how their contribution can be measured and evaluated, and ending with an explanation of different methods for the analysis of a full car. The more theoretical parts are mixed with demonstrations and practical hands-on sessions.

Course fee: \$1,200 + GST

- To explain the importance of NVH in the Automotive Engineering Process
- To give an outline of the procedural and technical problems of NVH
- To give a definition and understanding of the different categories of NVH for automotive problems
- Identify examples of automotive NVH problems including ride comfort & sound quality
- To develop an understanding of how sensors are used in noise and vibration testing
- To teach the merits of vibration and acoustic testing, and how to interpret the results
- To give an understanding of the common NVH problems and how to avoid them

Introduction to Vibration Measurements

Sydney & Brisbane only. This seminar is designed for engineers and technicians involved in product design, product testing and for those working with vibration measurements. The half day seminar covers:

- Vibration parameters
- Quantifying vibration parameters
- Types of vibration transducers
- Choosing and using an accelerometer
- Calibration
- Signal conditioning/amplifiers
- Vibration measurement and analysis
- Frequency analysis or overall level
- Signal vs system analysis

Noise Control and Assessment

Brüel & Kjaer is proud to introduce this new **industry recognized** course presented by Dr Sue Reed of the **University of Western Sydney**, School of Natural Sciences. It provides practical and theoretical information to enable the implementation of noise **controls** and the **assessment** of environmental and occupational noise problems.

Course fee: \$1,950 + GST

On successful completion, students will be able to:

- Undertake measurement and assessment procedures for environmental and occupational noise problems
- Gather primary noise evidence for litigation purposes and be able to present the information in court
- Prepare and assess environmental and occupational noise reports
- Recommend noise control measures
- Consider the range of noise issues which confront the community
- Assess noise in the occupational environment to protect employees

The course is conducted in 2 stages.

In Stage 1, participants will receive the course notes on CD to allow them to study and become familiar with the noise concepts that will be studied in the workshop. You will also have password access to a University website for the course student interaction during, **and for 3 months after**, the course.

Stage 2 is an intensive 4 day workshop with practical exercises and field work using an extensive range of noise testing equipment and software.

All participants will receive a Certificate of Attendance at the end of the workshop. Participants wishing to gain credits towards Certificate/Diploma/Masters courses and receive a Certificate of Attainment must successfully complete 2 assessments: a fieldwork report on the practical exercises undertaken during the workshop and a 2 hour quiz on noise assessment competencies.

Occupational Noise Training

This 1 day course is ideal for those who have carried out, or are intending to carry out occupational noise surveys or assessments for both large and small organisations. Attendees will gain the knowledge and confidence to accurately survey noise in the workplace and learn how to implement an effective noise management programme which will meet legislative requirements. Attendees will gain hands-on use of sound level meters. Courses are tailored to individual states requirements.

Course fee: \$495 +GST

- Health, safety and environmental legislation
- Noise control principles
- Noise control problems - Case Studies
- Noise surveys
- Recognising limitations and measurement uncertainty
- Fundamentals of sound
- Health effects of noise exposure on people
- The hearing mechanism
- Noise induced hearing loss

Pulse™ Analyzer Training

Free Seminar

PULSE™, the most popular Analyzer solution in the world is fast becoming an industry standard. This FREE half day course will reinforce the development of an advanced solution for sound & vibration measurement.

With real time capability, fast PC based and Multi-analysis, PULSE is ideal for a wide range of acoustic and vibration applications. This is a hands on session developed for new or experienced users alike where you will:

- Obtain basic understanding of the PULSE user interface
- Set up PULSE for acoustic and vibration measurements
- Perform fundamental acoustic and vibration measurements using PULSE
- Use result data from PULSE in other applications
- Understand Reporting, Data Handling & Time Editing

Sound Power & Noise Source Identification

Sydney and Brisbane only. This course is an introduction to product noise measurement using Sound Power. It is intended for engineers and technicians involved in product design, product testing, Environmental Modelling and those working with sound measurement. The course covers the basics of sound power and the international standards used to make these measurements. Sound power determination using sound intensity, sound pressure in a free field, and sound pressure in a reverberant field will be discussed. Sound power using intensity and pressure methods in a free field will be demonstrated. This free seminar covers;

- Basic Sound Parameters
- Propagation of Sound
- Sound Pressure / Sound Power
- Sound power determination
- Sound Intensity / Theory & Practice
- Intensity Mapping
- Noise Control Principles
- Advance Acoustical Measurement technique

Environmental Noise Prediction, (Mapping & Modelling) **New Free Course for 2009**

This **FREE** half day course provides practical and theoretical information on Environmental Noise Modelling. It also introduces The Predictor, the most efficient Multi-purpose Environmental Noise Calculation Software package. The training covers:

- Basics of Environmental Noise Modelling
- Setting up small and large models
- Analysing and publishing noise maps on the internet using Predictor Analyst (Case Study)
- Standards and Directives
- Use of CAD and GIS Data

Structural Testing

Free Seminar

This **FREE** half day course is for those who want to know more or start structural testing. The comprehensive understanding of structural dynamics is essential to the design and development of the new structures, and to solving noise and vibration problems on existing structures. Modal analysis is an efficient tool for describing, understanding, and modeling structural behavior. The study of modal analysis is an excellent means of attaining a solid understanding of structural dynamics. The course will present:

- Vibration principle
- Excitation
- Random excitation
- Experimental modal analysis using Modal Test Consultant
- Mechanical mobility measurements
- Impact excitation
- Modal analysis principle

Vibration Test Shakers & Controllers

Free Seminar

This **FREE** half day course is for those who want to know more or start vibration testing and would like to have better understanding of the practical approach. Each testing segment of the course will follow with experimental session using the complete close loop vibrational test system inclusive of the shaker and controller. The Brüel & Kjaer and LDS complete product range allows us to address the entire measurement chain and accept Turn-Key responsibility. The course will present:

- Vibrational principle
- Way to simulate the real life situation in vibrational testing
- Vibrational testing principle and close loop controlling systems
- Resonance search, Sine testing, Random testing, Shock testing
- More advanced testing process such as FDR (field data replicator), SOR (sine on random), ROR (random on random)
- Presentation of the results
- Importance of correct settings and following the exact test profile

Surveyors Club (Instrument Training)

Free Seminar

Surveyors Club provides the perfect opportunity for you to meet and discuss relevant issues and measurement solutions with other noise monitoring officers. The practical training and discussions are a benefit to both new and experienced instrument users. Seats at this **FREE** half day training session fill quickly so be sure to register as soon as possible.

- Commonly used parameters
- A general noise survey
- Evaluation of noise against noise limits
- How sound level meters work
- Data transfer, storage and management
- Prediction and control of environmental noise

2250 & 2270 - Advanced Applications

Free Seminar

Sydney and Brisbane only. This special interest afternoon is for current 2250 & 2270 users or anyone interested in the latest advanced applications available for the 2250 and 2270 Hand Held Analyzer. Recently released applications are demonstrated and how they can increase the power of your 2250 or 2270 Analyzer. This is an ideal opportunity for new users to learn more basic operations plus see the potential applications of these advanced instruments. During this session we cover:

- Enhanced Logging for long term monitoring, remote control and field applications
- To save data in manageable portions and make periodic reports
- Sound Recording and level triggered event markers for identification and documentation of sound sources
- Using the 2250 or 2270 as a Portable Data Recorder using CF or SD cards for transferring data to PC
- FFT and Tonal Analysis for Sound and Vibration
- Building Acoustic Measurements, sound insulation, noise barrier performance

A complimentary check of your current 2250 or 2270 software version is offered and if a later release of the version is available, we will upgrade during the session.

2009 Brüel & Kjaer Training Programme Registration Form

Building Acoustics 1 day 9:00am to 5:00pm \$650 + GST

Sydney: June 10

Environmental Noise Training 2 days 9:00am to 5:00pm \$995 + GST

Sydney: May 19 & 20
Brisbane: March 11 & 12
 November 11 & 12

Human Vibration Assessment 1 day 9:00am to 5:00pm \$450 + GST

Sydney: June 3
Brisbane: May 14
 September 10

Introduction to NVH Testing 2 days 9:00am to 5:00pm \$1,200 + GST

Melbourne: May 20 & 21
 August 20 & 21

Noise Control & Assessment 4 days 9:00am to 5:00pm \$1,950 + GST

Sydney: July 21-24

Occupational Noise Training 1 day 9:00am to 5:00pm \$495 + GST

Sydney: May 26
Brisbane: July 15

Environmental Noise Prediction NEW (Mapping & Modelling) FREE 1:30pm to 4:30pm

Sydney: April 8 September 2
Brisbane: May 13 September 9

Introduction to Vibration Measurements FREE 1:30pm to 4:30pm

Sydney: April 9 September 3
Brisbane: May 12 November 10

PULSE Analyzer Training FREE 9:00am to 12:30pm

Melbourne: June 15 October 30
Adelaide November 17

Structural Testing FREE 9:00am to 12:30pm

Sydney: May 13
Melbourne: April 22

Sound Power & Noise Source Identification FREE 9:00am to 12:30pm

Sydney: April 8 September 2
Brisbane: May 13 September 9

Vibration Test Shakers & Controllers FREE 9:00am to 12:30pm

Melbourne: July 15

Surveyors Club FREE 9:00am to 12:30pm

Sydney: February 3 March 3
 April 7 May 5
 June 2 July 7
 August 4 September 1
 October 6 November 4
Brisbane: March 10 May 12
 July 14 September 8
 November 10
Melbourne: April 6 June 10
 August 5 October 7
Adelaide: June 24 November 18

2250/2270 Advanced Applications FREE 1:30pm to 4:30pm

Sydney: February 3 March 3
 April 7 May 5
 June 2 July 7
 August 4 September 1
 October 6 November 4
Brisbane: March 10 July 14
 September 8

Venues will be advised upon registration.

Important Notice:
Confirmation of registration for any of the fee paying courses will only be confirmed upon receipt of a Purchase Order or full payment of the course fee.

Cancellation Policy:
A full refund will be made if the course is cancelled by Bruel & Kjaer.

Cancellation by participants up to 4-weeks prior to start of the course incur 20% administration fee. Cancellation by participant thereafter will be liable to pay the full course fee.

Who Will Be Attending

(Please list additional registrants on a separate sheet and attach)

Attendee's Name:

Job Title:

Company:

Address:

City:

State:

Postcode:

Phone:

Email:

Brüel & Kjaer 

Tick here if you do not want to receive email updates about special promotions, new services, products, applications and upcoming events we believe would interest you.

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