

NEW



DESIGN AND MANAGEMENT OF VIBRATION IN ENGINEERING SYSTEMS

3 CPD POINTS

SAIChE 464



Presented By: John Broli of Engineers for Africa (E4A)

Course Outline

The main objective is to provide engineers with the fundamentals of risk management and legal liabilities avoidance in design and practice and to thereby limit the risk of failure and avoid the excessive costs of failure and downtime resulting.

Economic benefits are achieved with the vibration avoidance and mitigation strategies.

This new and extensive Course is an in-depth review of the important risk of vibration in its many forms in engineering design and operations at a level beneficial to all engineering disciplines. The subject of vibration is covered by addressing the main types and principles, and design guidelines. This high-grade course enables engineers and scientists involved in design, projects and plant operations to assess the design requirements for addressing vibration and the mitigation thereof.

Firstly, this Course focusses on the nature of variables leading to vibration and fundamental causes of vibrations. It compares the variables that will enhance vibration in much detail.

The second main section involves training attendees to apply the E4A design algorithm and analytical methods to identify possible vibration risks. We discuss in detail the variables stemming from these analyses and how these should be considered in all vibration engineering designs. We also 'drill down' on the critical variables and in particular resonant vibration. The use of the variable listings and E4A selected charts paves the way to the first level of management of vibration.

Furthermore, the Course then sets out detailed studies of resonant vibration and all methods to avoid or mitigate the critical resonance problems. Underlying causes of extended resonance are also discussed across a range of equipment types.

There is a thorough overview of VSDs and the various ways that vibrations can be managed through the deployment of variable speed drives.

Other interesting studies include structures vibrations, flow induced vibrations and shock or water hammer vibrations. Vibration Noise is also studied from the important point of revealing pending vibration problems. Vibration linked to fittings in piping systems is also an interesting area addressed on the Course.

The final summary is prepared as a series of DESIGN STAGES OR STEPS in the E4A master chart manner with control checklists and the appropriate design approaches. We include in the Course Interesting and unusual case studies and factual examples of vibration containment or elimination.

Who should attend?

This Course is open for attendance by all Engineering skill levels and all Professional Engineering, Technologists and Technicians Categories as under the ECSA registrations.

Requirements?

All E4A courses are live, on-line and extend over two days.

Quantity discounts are available for group attendances or multiple bookings paid in advance.

All courses include:

- a. interesting pre-reading material is sent to attendees normally two days prior to the start.
- b. Course materials are emailed ahead to you for the course, and your personal library.
- c. ZOOM links are sent to you 2 days prior to the course start date.
- d. The Course framework and time-plan is sent ahead to attendees as an Excel Document enabling easy tracking.
- e. Workshops, which include case studies and worked examples, are interspersed with tea and lunch breaks and all materials are sent ahead to attendees for these exercises.
- f. A Certificate of Attendance, with CPD points reflected, is provided at the end of the event.

There is a full scope of reading material that extends the Course to enable the award of 3 CPD points, and we will provide those details and discuss with attendees how these details can be addressed at the time of your registration for the Course. The full live on-line attendance remains at 2 days.

Register?

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