



DYNAMIC LOADING ON STRUCTURES

“Advanced Structural Dynamics”

2 CPD Points CESA

Virtual Workshop

Date: 5 & 6 August, 2021 | 14 & 15 October, 2021



COURSE OVERVIEW

It is inevitable that an Engineer within the Structural Engineering field will be required to design structures that must be able to withstand some form of dynamic loading. It is therefore imperative that the Engineer has, at least, a fundamental knowledge of structural dynamics, and an ability to perform basic calculations.

Although rules-of-thumb may be applied to the design of many structures for dynamic loading, appropriate designs must include a mathematical analysis. Structural dynamics is a complex subject, and complete presentation of the topics beyond the scope of this workshop.

The workshop is therefore aimed at giving a technical discussion in dynamic analysis and design. The objective is to review fundamental concepts, analysis techniques and rules-of-thumb to eliminate structural problems. It will further equip the Engineer with knowledge of structural dynamics for problems most frequently encountered in the structural engineering field. Focus of this two day training workshop will be to cover topics such as single degree of freedom systems, forced vibration, multi-degree of freedom systems and the design of reciprocating foundations, taking into consideration standards and codes applicable.

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DYNAMIC LOADING ON STRUCTURES

SPEAKER

BENEFITS OF ATTENDING

- Gaining insight into structural dynamics
- Single and Multi-Degree of Freedom Systems
- Gaining insight into seismic design codes
- Design considerations for seismic loads
- Discussing dynamic response of slender structures
- A holistic approach to dynamic analysis for winds
- Foundation Design for Vibrating Machinery
- Vibrations and impacts on engineering structures
- Analytical Dynamics
- Regulations and standards

WHO SHOULD ATTEND

- Structural Engineers
- Structural Engineering Technicians
- Civil Structural Engineers
- Structural Design Engineers
- Civil Engineers
- Consulting Structural Engineers
- Geotechnical Engineers

Dear Delegate,

Dynamic Loading on structures workshop aims to transfer knowledge and skills to civil and structural engineers on the fundamentals and practical applications of structural dynamics analysis techniques in support of the design of structures to withstand rare dynamic actions. Understanding structural dynamics is crucial to the engineering design of structures to withstand severe environmental conditions of wind and waves, rare event of an earthquake, incidences/accidents on highways, train tracks, wharfs, warehouses involving collision or impact of a fallen object. In addition, structural dynamics figures in serviceability requirements such as assessment of building occupier comfort, (floor vibrations and buildings way).

It is noted that many engineers have plenty of exposure to dynamics as a topic of some importance through the computer software they have purchased and use, presentations they attend in technical seminars and conversations they have with specialists. Even then, the subject matter of dynamic loading on structures is seldom well understood. Few engineers have the time to go through text books in a systematic manner, and this is especially the case for the more senior members of the profession who have been out of university for a long time.

Experienced professional engineers who are in a supervisory position, and are responsible for the design, or construction of a structure, normally experience difficulties when it comes to reviewing results of structural dynamic analyses obtained by (usually) more junior members of the design team as it is often unclear what results they are to expect.

This two-day workshop is therefore aimed at giving a technical discussion in dynamic analysis and design. The objective is to review fundamental concepts, analysis techniques and rules-of-thumb to eliminate structural problems. It will further equip the Engineer with knowledge of structural dynamics for problems most frequently encountered in the structural engineering field. Focus of this two day training workshop will be to cover topics such as single degree of freedom systems, forced vibration, multi-degree of freedom systems and the design of reciprocating foundations, taking into consideration standards and codes applicable.

Please Note

Bringing along your laptop/notebook computer is encouraged but not essential.

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