



Title of Module:	<b>EXPERIMENTAL METHODS IN VIBRATION AND SOLID MECHANICS</b>
Code:	<b>TME7042</b>
Total time:	60 hours
Credit points:	4
Level:	MSc and PhD
Prerequisite:	none
Co-requisite:	none

**AIMS:**

To provide the required knowledge to the assembly of measurement chains and the execution of experiments in Vibration and Solid Mechanics.

**SYLLABUS:**

Basic instrumentation. Vibration measurement in machines and equipment. Measurement techniques of frequency response functions (FRFs) in beams, plates and structural elements. Measurement techniques of dynamic properties of metallic and viscoelastic materials. Measurement of transmissibility of vibration isolators. Measurement of efficacy of vibration neutralizers. Measurement techniques of stress and strain by extensometry. Fatigue tests in mechanical components.

**BIBLIOGRAPHY:**

- Experimental Solid Mechanics, A. Shukla e J. W. Daily, College House Enterprises, 2010;
- Modal Testing – theory, practice and application (2<sup>nd</sup> edition), D. J. Ewins, Research Studies Press, 2000;
- Vibration Testing (2<sup>nd</sup> edition), K. G. McConnell e P. S. Varoto, John Wiley & Sons, 2008;
- Vibration Testing, with Modal Testing and Health Monitoring, J. C. Slater, John Wiley & Sons, 2013.

**RESPONSIBLE CO-ORDINATOR:**

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