Experimental Assessment & Numerical Modeling of Seismically Isolated Structural Systems

INTENSIVE COURSE

The present course has been organized in cooperation with the *Emerging Structural Technologies Research Group* of the **Imperial College** in London. It consists of 24 hours of both theory and practical applications related to the experimental assessment of full-scale isolation devices, together with the numerical modeling of case study structures. The outcomes of dynamic tests performed on full-scale devices of real applications will be analyzed, through data reduction procedures, according to the European Standard code for Anti-Seismic devices UNI:EN15129:2009. Finally, design procedures will be presented for the typologies of isolators adopted in common practice, and the seismic response of a base-isolated case study structure will be assessed, through Non-Linear Time History Analysis (NLTHA), by means of a commercial F.E.M. software.

Contents:

Week #1	Topic:	Room:	Time:
13/10/2025	Introduction to Seismic Isolation	Skem 163	2:00p.m. – 4:00p.m.
14/10/2025	European standard for Anti-Seismic devices	Skem 207	2:00p.m. – 4:00p.m.
15/10/2025	Data reduction of dynamic tests on full-scale isolators	Skem 163	2:00p.m. – 6:00p.m.
16/10/2025	Tutorial on modeling of isolated structures in SAP2000	Skem 207	2:00p.m. – 4:00p.m.
17/10/2025	Fast design procedures for isolation systems	Skem 165	2:00p.m. – 4:00p.m.

Week #2	Topic:	Room:	Time:
20/10/2025	Definition of a case study structure	Skem 163	2:00p.m. – 4:00p.m.
21/10/2025	Selection of the seismic input for NLTHA	Skem 207	2:00p.m. – 4:00p.m.
22/10/2025	Modeling and analysis of the isolated structural system	Skem 163	2:00p.m. – 6:00p.m.
23/10/2025	Simplified lumped mass oscillators	Skem 207	2:00p.m. – 4:00p.m.
24/10/2025	Analysis of results	Skem 165	2:00p.m. – 4:00p.m.

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Dates: 2 weeks: 13th to 17th and 20th to 24th October 2025

Time: 24 hours

For remote participation or any inquiries:
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Venue: Imperial College London – Skempton Building