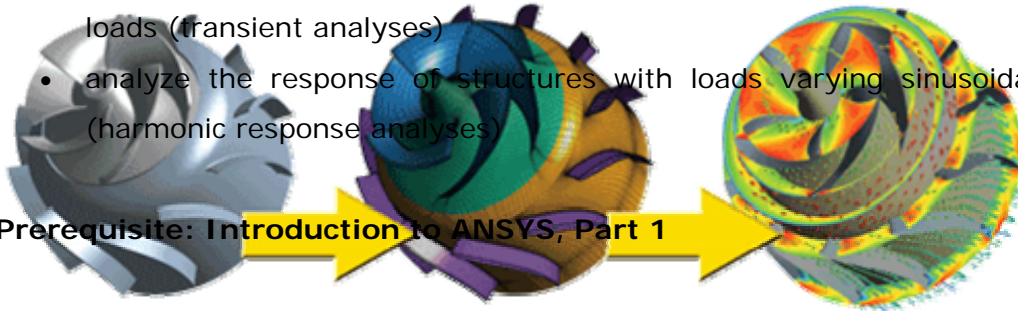


Dynamics

Length: 2 Days

Engineers capable of analyzing the dynamic response of structures would benefit from this two-day course focusing on modal, harmonic and transient dynamic analysis. Upon completion, analysts should be able to

- calculate natural frequencies and mode shapes of linear elastic structures (modal analyses)
- analyze the response of structures under the action of time-varying loads (transient analyses)
- analyze the response of structures with loads varying sinusoidally (harmonic response analyses)



Prerequisite: Introduction to ANSYS, Part 1

Course Topics Include:

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<u>Module 1 - Introduction</u>	
A. Definition & Purpose	M1-6
B. Types of Dynamic Analysis	M1-9
C. Basic Concepts and Terminology	M1-14
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E. Workshop - Introductory Workshop (WS-5)	M1-39
<u>Module 2 - Modal Analysis</u>	
A. Definition & Purpose	M2-3
B. Terminology & Concepts	M2-5
C. Procedure	M2-19
D1. Workshop - Modal Analysis (WS-17)	M2-40
D2. Workshop - Modal Analysis (WS-23)	M2-40
D. Workshop - Harmonic Analysis (WS-27)	M3-34

<p><u>Module 3 - Harmonic Analysis</u></p> <p>A. Definition & Purpose B. Terminology & Concepts C. Procedure D. Workshop - Harmonic Analysis (WS-27)</p>	<p>M3-3 M3-6 M3-12 M3-34</p>
<p><u>Module 4 - Transient Dynamic Analysis</u></p> <p>A. Definition & Purpose B. Terminology & Concepts C. Procedure D. Workshop - Transient Analysis (WS-35)</p>	<p>M4-3 M4-5 M4-26 M4-62</p>
<p><u>Module 5 - Restarting an Analysis</u></p> <p>A. Definition & Purpose B. Procedure C. Other Restart Options D. About Restart Files E. Workshop - Restarting an Analysis (WS-43)</p>	<p>M5-3 M5-7 M5-16 M5-18 M5-21</p>
<p><u>Module 6 - Spectrum Analysis</u></p> <p>A. Definition & Purpose B. Terminology & Concepts C. Procedure D. Spectrum Analysis Guidelines E. Workshop – Response Spectrum (WS-49) F. Random Vibration Analysis G. Workshop – Random Vibration (WS-55)</p>	<p>M6-3 M6-9 M6-20 M6-33 M6-36 M6-37 M6-76</p>
<p><u>Module 7 - Mode Superposition</u></p> <p>A. Definition & Purpose B. Procedure C. Workshop - Mode Superposition (rerun WS-5)</p>	<p>M7-3 M7-8 M7-26</p>
<p><u>Module 8 - Modal Analysis (Advanced Topics)</u></p> <p>A. Prestressed Modal Analysis B. Workshop – Pre-Stressed Modal (WS-61) C. Modal Cyclic Symmetry D. Workshop – Modal Cyclic Symmetry (WS-67) E. Large Deflection Modal Analysis F. Workshop – Component Mode Synthesis (WS-75)</p>	<p>M8-3 M8-10 M8-11 M8-35 M8-36 M8-50</p>

