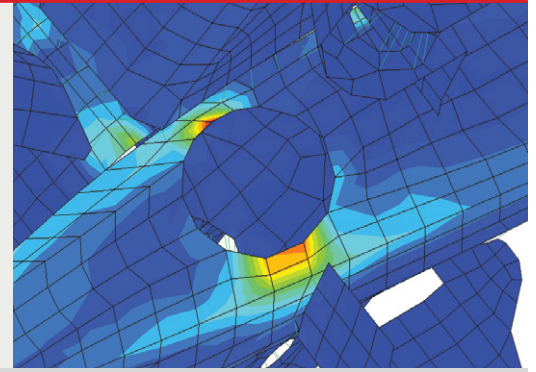


Academic Software Bundle For Structures



The Academic Software Bundle for Structures provides several related software products to help you assess the functional performance of mechanical parts & products from a structural perspective (displacement, strain, stress, frequency), a thermal perspective (temperatures, gradients, flow paths), an acoustics perspective (noise levels, flow paths), or some combination of these.

You can use this bundle to perform a broad range of simulations such as static and dynamic FEA, linear and nonlinear FEA, in the time domain or the frequency domain, as well as analyses involving contacts and impacts, vibrations, and fluid-structure interactions.

Targeted Users & Goals

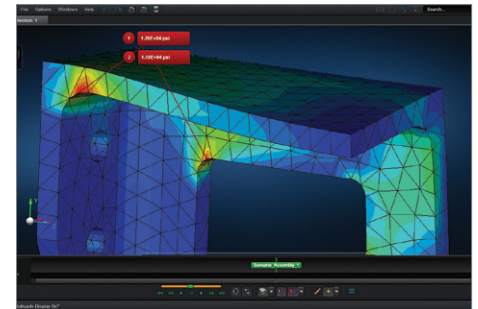
- Professors striving to bring engineering principles to life and teach courses that are more dynamic, fun, and effective...
- Researchers seeking innovative engineering solutions...
- Students taking courses, doing research, or working on projects or competitions in search of the best possible engineering education...
...through finite element analysis!

Benefits

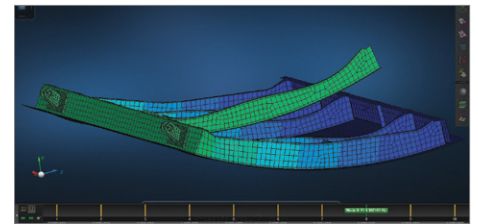
- **Affordable** - schools can obtain numerous licenses on a reasonable budget
- **Conveniently accessible** - run this software in a computer lab at school or on your own computer
- **Easily scalable to industrial-strength** - start with small models and progressively increase complexity and realism without hitting walls based on model size (Crawl-Walk-Run); do the same scale of simulations done by commercial companies.
- **Unrestricted simulation capability** - our academic licenses provide the same capabilities as commercial licenses for the software products in this bundle
- **Tailored licensing** - "academic user packs" are available based on your intended usage scenario
- **Complement engineering theory & textbooks for a richer education**

Applications in Engineering Coursework, Research, & Student Projects

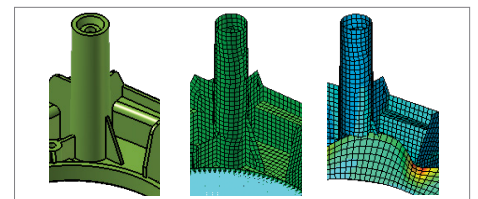
- Introduction to Finite Element Analysis
- Strength of Materials
- Stress Analysis
- Machine Design
- Design Optimization
- Structural Dynamics
- Experimental Mechanics
- Vibrations of Machinery
- Heat Transfer
- Composites
- Computational Acoustics
- Fracture mechanics
- Fatigue
- Metal-forming & shaping
- Plasticity & nonlinear materials
- Contact dynamics
- Aircraft Design & Engineering
- Aeroelasticity
- Rotordynamics
- Spacecraft Thermal Design & Analysis
- Biomedical Engineering (stents, implants, prosthetics, soft tissue, medical devices, etc)
- Fluid-Structure Interactions
- Multi-Scale Modeling
- Formula SAE, Baja, Aero Design/Build/Fly, Steel Bridge, etc.



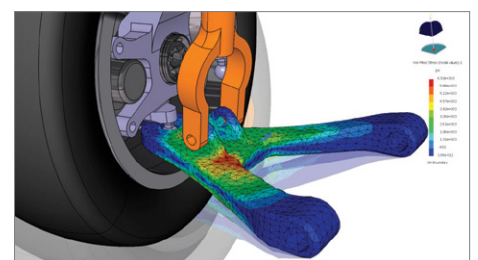
Define loading scenarios and view deformation and stress plots



Use Normal Modes Analysis for vibration problems or locate unconstrained meshes



Progress from geometry to mesh to stress



Find stress hot spots in a vehicle suspension

Product Families & Modules

This bundle contains software targeted at finite-element analysis (FEA) to assess the structural, thermal, crash- or impact-related characteristics of mechanical components & systems. The lists below identify which MSC products are currently included with this bundle and which optional 3rd-party products are currently available for an additional fee.

Included:			
MSC Nastran	MSC Apex ¹	Marc	
<ul style="list-style-type: none"> • Basic (Linear Statics, Normal Modes, Buckling) • ACMS • Acoustics • Adams Integration • Advanced Heat Thermal (RC Network) • Advanced Nonlinear (SOL 400) • Aeroelasticity I • Connectors • Design Optimization • Digimat Interface • Digimat Parallel (32 Cores) • Distributed Memory Parallel (DMP) (Unlimited Cores) • DMAP • Dynamic Design Analysis Method (DDAM) • Dynamics • Embedded Fatigue – Standard • Embedded Fatigue – Advanced I • GPU (Unlimited Cores) • Heat Transfer • Implicit Nonlinear (SOL 600) • Implicit Nonlinear Shape Memory Materials • Implicit Nonlinear Hemi Cube View Factors • Implicit Nonlinear Multi-Processor • Linear Contact • Marc Translator • Multi-Model Optimization • Nonlinear • Rotordynamics • Shared Memory Parallel (SMP) • Superelements 	<ul style="list-style-type: none"> • Modeler • Structures <p>¹ Hours of video tutorials are included</p>	<ul style="list-style-type: none"> • Marc Complete Package <ul style="list-style-type: none"> • Marc Standard • Marc Electrical • Marc Global Remeshing • Marc Hemi-Cube View Factors • Marc 2D Mesher Only • Marc 3D Mesher Only • Mentat <ul style="list-style-type: none"> • Mentat Hex Mesher • Mentat CMOLD Access • Mentat ITI Access • Marc Metal Cutting • Marc Shape Memory Materials • Marc GPU (Unlimited Cores) • Marc Multi-Processor - 32 Processors • Mentat Geometry Translators 	
	Patran		
	<ul style="list-style-type: none"> • Patran Basic Package <ul style="list-style-type: none"> • Patran • MSC Nastran Preference • Marc Preference • Dytran Preference • Analysis Manager • Queue Manager • Advanced Surface Meshing • Beam Tools • Random Analysis • Patran Generic Geometry Translators • Patran ACIS SAT Access • Patran CATIA V4 Access • Patran CATIA V5 Access • Patran Creo Access • Patran NX Access • Patran SolidWorks Access • Patran ABAQUS Preference • Patran ANSYS Preference • Patran LS-DYNA Preference • Patran PAM-CRASH Preference • Patran Materials • Patran Materials Enterprise • Patran Thermal 		
		Sinda	
		<ul style="list-style-type: none"> • Sinda for Patran Package • Sinda • Patran Plug-in • SINDARad • Sinda Office Toolkit 	
		Other	
		<ul style="list-style-type: none"> • Dytran • Flightloads 	

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