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 structuralperspective (displacement, strain, stress, frequency), a thermal perspective (temperatures,gradients, flow paths), an acoustics perspective (noise levels, flow paths), or some combinationof these.

You can use this bundle to perform a broad range of simulations such as static and dynamicFEA, 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 and 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 motion & systems simulation!

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
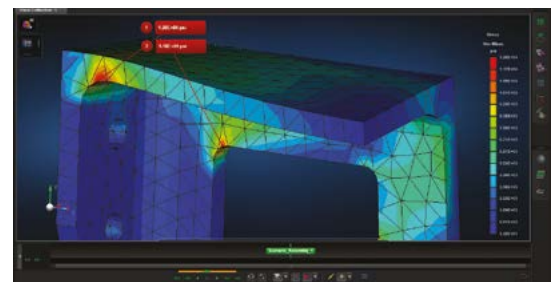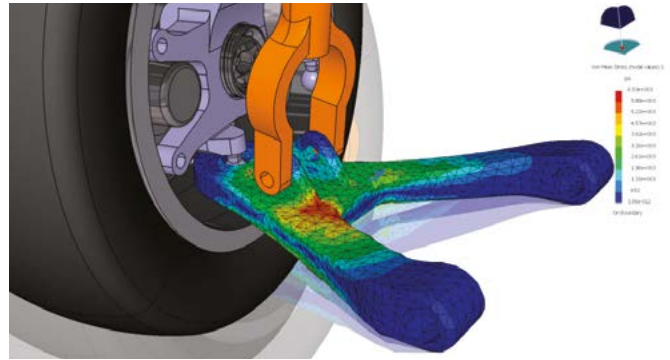

Define loading scenarios and view deformation and stress plots
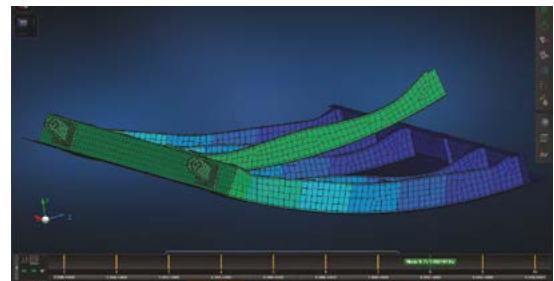
Use Normal Modes Analysis for vibration problems or locate unconstrained meshes
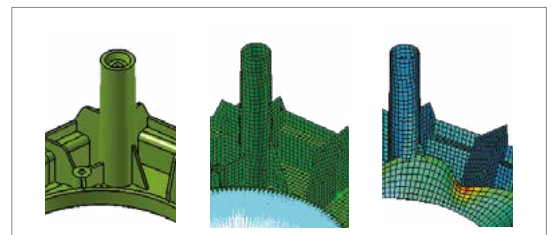
Progress from geometry to mesh to stress

Find stress hot spots in a vehicle suspension

Applications in engineering coursework, research, and student projects

- Dynamics

- Mechanism Analysis

- Vibrations

- Robotics

- Computer-aided Engineering

- Mechanics of Machinery

- Capstone Design

- Vehicle Engineering

- 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.

Product families and 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**
MSC Nastran Structures Package	MSC Apex Modeler	Marc Complete Package
MSC Nastran Basic (Linear Statics, Normal Modes, Buckling)	MSC Apex CAD Access Pack	Marc Standard
MSC Nastran Linear Contact	MSC Apex Structures	Marc Electrical
MSC Nastran Nonlinear	*Hours of video tutorials are included	Marc Hemi-Cube View Factors
MSC Nastran Heat Transfer		Marc 2D Mesher Only
MSC Nastran Connectors	**Patran**	Marc 3D Mesher Only
MSC Nastran Dynamics		Mentat
MSC Nastran Dynamic Design Analysis Method (DDAM)	Patran Basic Package	Mentat Hex Mesher
MSC Nastran DMAP	Patran	Mentat CMOLD Access
MSC Nastran Design Optimization	MSC Nastran Preference	Mentat ITI Access
MSC Nastran Multi-Model Optimization	Marc Preference	Marc Metal Cutting
MSC Nastran Rotordynamics	Dytran Preference	Marc Shape Memory Materials
MS Nastran Superelements	Analysis Manager	Marc GPU (Unlimited Cores)
MSC Nastran Acoustics	Queue Manager	Marc Multi-Processor - 32 Processors
MSC Nastran Aeroelasticity I	Advanced Surface Meshing	Mentat Geometry Translators
MSC Nastran Advanced Nonlinear (SOL 400)	Beam Tools	
MSC Nastran Advanced Heat Thermal (RC Network)	Random Analysis	**Other**
MSC Nastran Implicit Nonlinear (SOL600)	Patran Generic Geometry Translators	
MSC Nastran Implicit Nonlinear (SOL 600) Multiprocessor - 32 CPU	Patran ACIS SAT Access	Dytran
MSC Nastran Implicit Nonlinear Shape Memory Materialsv	Patran CATIA V4 Access	Flightloads
MSC Nastran Implicit Nonlinear Hemi Cube View Factors	Patran CATIA V5 Access	
MSC Nastran Embedded Fatigue - Standard	Patran Creo Access	
MSC Nastran Embedded Fatigue - Advanced I	Patran NX Access	
MSC Nastran Adams Integration	Patran SolidWorks Access	
MSC Nastran Marc Translator	Patran ABAQUS Preference	
MSC Nastran Digimat Interface	Patran ANSYS Preference	
MSC Nastran Digimat Parallel (32 Cores)	Patran LS-DYNA Preference	
MSC Nastran GPU (Unlimited Cores)	Patran PAM-CRASH Preference	
MSC Nastran Parallel	Patran Materials	
MSC Nastran Parallel (32 Cores)	Patran Materials Enterprise	
MSC Nastran ACMS	Patran Thermal	

HEXAGON | MSC Software®

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

MSC Software, part of Hexagon's Manufacturing Intelligence division, is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. Learn more at mscsoftware.com. Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com and follow us @HexagonAB.