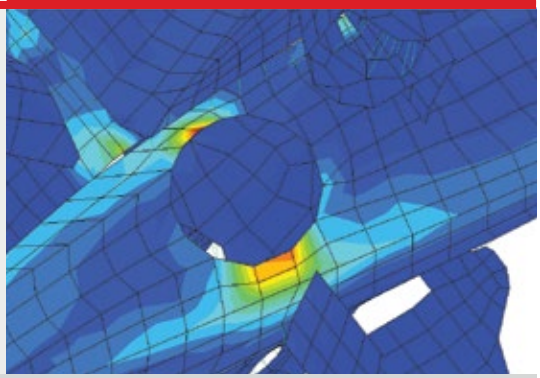
DATASHEET



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

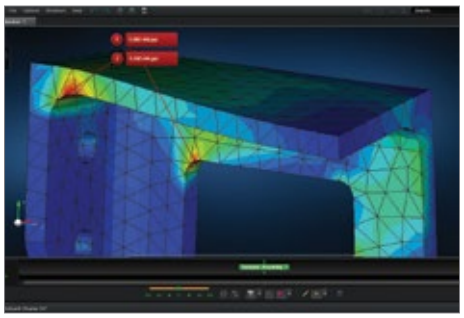
- Professors striving to bring engineering principles to life and teach courses that are more dynamic, fun, and effective
- Researchers seeking innovative engineering solutions
- Students taking courses, doing research, or working on projects or competitions in search of the best possible engineering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

Benefits

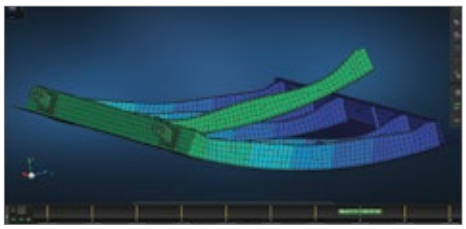
- **Affordable** - schools can obtain numerous licenses on a reasonable budget
- **Conveniently accessible** - run this software in a computer lab at school or on your own computer
- **Easily scalable to industrial-strength** - start with small models and progressively increase complexity and realism 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**

Applications in Engineering Coursework, Research, & Student Projects

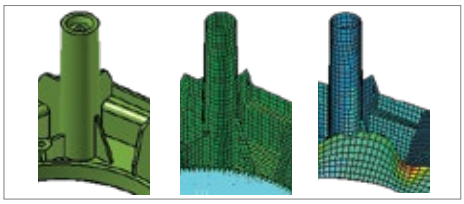
- Dynamics
- Mechanism Analysis
- Vibrations
- Robotics
- Computer-aided Engineering
- Mechanics of Machinery
- Capstone Design
- Vehicle Engineering
- Metal-forming & shaping
- Plasticity & nonlinear materials



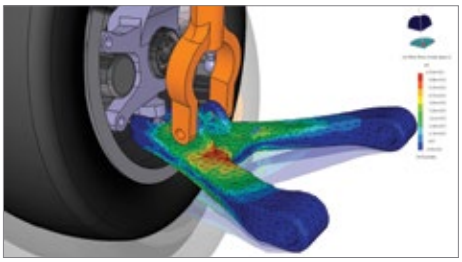
Define loading scenarios and view deformation and stress plots



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

PART OF HEXAGON

MSC Software

- 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 & 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 Nastran Structures Package
- MSC Nastran Basic (Linear Statics, Normal Modes, Buckling)
- MSC Nastran Linear Contact
- MSC Nastran Nonlinear
- MSC Nastran Heat Transfer
- MSC Nastran Connectors
- MSC Nastran Dynamics
- MSC Nastran Dynamic Design Analysis Method (DDAM)
- MSC Nastran DMAP
- MSC Nastran Design Optimization
- MSC Nastran Multi-Model Optimization
- MSC Nastran Rotordynamics
- MS Nastran Superelements
- MSC Nastran Acoustics
- MSC Nastran Aeroelasticity I
- MSC Nastran Advanced Nonlinear (SOL 400)
- MSC Nastran Advanced Heat Thermal (RC Network)
- MSC Nastran Implicit Nonlinear (SOL600)
- MSC Nastran Implicit Nonlinear (SOL 600) Multiprocessor - 32 CPU
- MSC Nastran Implicit Nonlinear Shape Memory Materials
- MSC Nastran Implicit Nonlinear Hemi Cube View Factors
- MSC Nastran Embedded Fatigue - Standard
- MSC Nastran Embedded Fatigue - Advanced I
- MSC Nastran Adams Integration
- MSC Nastran Marc Translator
- MSC Nastran Digimat Interface
- MSC Nastran Digimat Parallel (32 Cores)
- MSC Nastran GPU (Unlimited Cores)
- MSC Nastran Parallel
- MSC Nastran Parallel (32 Cores)
- MSC Nastran ACMS

MSC Apex[1]

- MSC Apex Modeler
- MSC Apex CAD Access Pack
- MSC Apex Structures

*Hours of video tutorials are included

Patran

- Patran Basic Package
  - 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

Marc

- Marc Complete Package
  - Marc Standard
  - Marc Electrical
  - Marc Hemi-Cube View Factors
  - Marc 2D Mesher Only
  - Marc 3D Mesher Only
  - Mentat
  - 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

Sinda

- Sinda
- Sinda for Patran Package
- Sinda PATRAN Plug-in
- SINDARad
- Sinda Network Modeler Package
- Sinda Office Toolkit

Other

- Dytran
- Flightloads

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