

Academic Software Bundle For Motion & Systems Simulation



The Academic Software Bundle for Motion & System Simulation (or Academic Motion Bundle, for short) provides several related software products focused on kinematics, rigid & flexible multibody dynamics, and schematic (block-diagram) simulations.

Representative systems to simulate with this bundle include rotating & translating linkages; gear sets; cams; cables, belts & pulleys; as well as various actuators as found in machinery, latches & closures, mechatronic devices, robots, ground vehicles, aircraft landing gear & flaps, etc.

Build: Create simple graphical representations of systems using block diagrams, primitive geometries, or sophisticated geometries imported from CAD.

Test: Perform single simulations manually or parameterize your virtual prototypes and perform automated design sensitivity & optimization studies.

Review: Calculate displacements, velocities, & accelerations of parts & points in your system; motor forces & torques; hydraulic or pneumatic pressures; momentum; energy; frequencies; even dynamic stresses & fatigue hot spots. Visualize system behavior using animations & plots.

Targeted Users & Goals

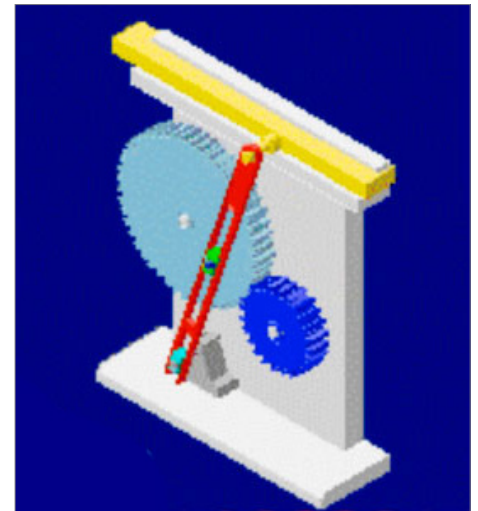
- Professors striving to bring engineering principles to life and teach courses that are more dynamic, fun, and effective...
 - Researchers seeking innovative engineering solutions...
 - Students taking courses, doing research, or working on projects or competitions in search of the best possible engineering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

Benefits

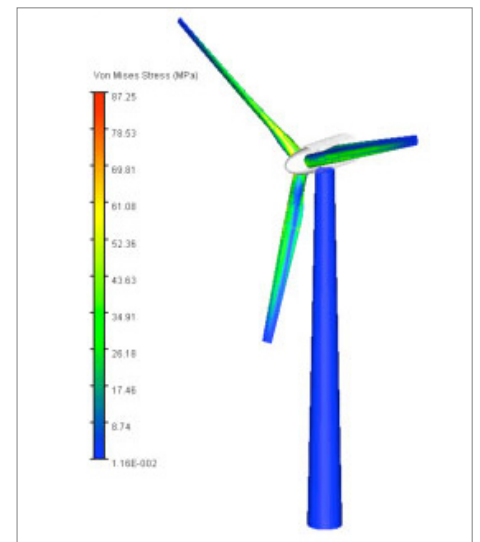
- **Affordable** - schools can obtain numerous licenses on a reasonable budget
- **Conveniently accessible** - run this software in a computer lab at school or on your own computer
- **Easily scalable to industrial-strength** - start with small models and progressively increase complexity and realism 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 | • Mechatronics & Controls |
| • Mechanism Analysis | • Advanced Dynamics |
| • Vibrations | • Hydraulics & Pneumatics |
| • Robotics | • Wind Turbines |
| • Computer-aided Engineering | • Biomechanics |
| • Mechanics of Machinery | • Flexible-body Dynamics |
| • Capstone Design | • Formula SAE, Baja, Solar Car, Human Powered Vehicle, autonomous vehicles, etc. |
| • Vehicle Engineering | |



Understand the motion behavior of mechanical systems



Visualize stresses due to motion-induced loads

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:		
MD Adams	MD Adams/Car	Easy 5
<ul style="list-style-type: none"> • View • Exchange • Flex • Controls • Mechatronics • Vibration • Durability • Solver • Solver Shared Memory Parallel (SMP) • Linear 	<ul style="list-style-type: none"> • Car • Car Suspension • Car Ride • Tire Handling • 3D Road • SmartDriver • Driveline • Chassis 	<ul style="list-style-type: none"> • Model Building • Analysis • MATLAB Interface • Matrix Algebra Tool (MAT) • Library Developer • Gas Dynamics/Pneumatics Library • Multiphase Fluid Library • Thermal Hydraulics Library
Optional:		
MD Adams	MD Adams/Car	Easy 5
<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Tire FTire (www.ftire.com) 	<ul style="list-style-type: none"> • None

*To learn more about the detailed analysis capabilities of any of these products, see the associated datasheets.