Mechanical Engineering





Since 1949, Sandia National Laboratories has developed science-based technologies that support the protection of our national security. We continue to be one of the nation's premier research, development and engineering laboratories, with over 8,000 employees across our sites in Albuquerque, NM and Livermore, CA. Our highest goal is to become the laboratory that the United States turns to first for innovative systems engineering solutions to our most challenging and complex problems.

Mechanical engineers work on a variety of major Sandia projects involving areas such as nuclear weapons and power, renewable energy, intelligent machines, robotics, pulsed power, missile defense, field testing, remote sensing, advanced manufacturing, and micro and nanosystems.

Below are just a few of the projects you may be working on:

TRANSFORM OUR ENERGY RESOURCES



Join a team of reactor engineers who are experimentally investigating commercial nuclear reactor physics. The goal of the experimental program is to improve the economics of nuclear power generation, thereby helping to ensure the viability of this source of large-scale carbon-free energy.

PROTECT PRECIOUS CARGO



Help Sandia design and implement systems safeguarding and securing high-consequence over-the-road shipments. Sandia provides solutions for the nation's most demanding transportation needs with the ever changing technology, threats and operating environments of today.

SIMULATE EXPLOSIONS



Understand the mechanics of a building explosion through simulation. Sandia CTH, a shock physics hydrocode, and Sierra Mechanics code can be used to simulate pervasive failures as shown above. The CTH code is used to provide the blast loading description and the Sierra/SM module simulates the building collapse.

ENHANCE AIRCRAFT SAFETY



Apply your skills to keeping our commercial aircraft safe. Sandia provides technology in detecting aircraft aging. Embedded sensors that provide full-time monitoring could supplement, reduce, or even eliminate scheduled structural inspections.

PROVIDE MISSILE DEFENSE



Be a rocket scientist - seriously. Sandia has provided technical support to the Missile Defense Agency and its predecessors for nearly 20 years. We play a pivotal role in providing expertise to missile systems including electrical and mechanical hardware, and flight software.

BUILD ROBOTS



Help Sandia robotics engineers design robots to aid those who are trapped under rubble or water. The Gemini-Scout, shown above, can assess situations and potential hazards and allow operations to move more quickly.

SKILLS & KNOWLEDGE DESIRED:

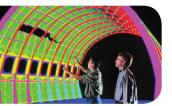
- Aerospace Systems
- Computational Theory
- Control Theory
- Design for Manufacturability
- Design, Modeling, and Simulation
- Dynamic Analysis
- Finite Element Analysis
- Fluid Mechanics
- Heat Transfer
- Materials Science and Engineering
- Mechanical Design Theory
- Product Design
- Rapid Prototyping
- Solid Mechanics
- Solid Modeling
- Systems Design
- Thermal Sciences
- Thermodynamics
- Transport Theory

PROFESSIONAL ATTRIBUTES:

- Strong Communicator
- Commitment to National Service
- Delivers Results
- Continuous Learner









MOST JOBS REQUIRE A U.S. DEPARTMENT OF ENERGY SECURITY CLEARANCE.

HOW TO APPLY

Opportunities include, but are not limited to:

- Advanced Materials (development, modeling, reliability)
- Advanced Weapons Systems
- Aerodynamics/Aerothermodynamics (CFD, windtunnel and flight testing)
- Aerospace Technology (rockets, satellites, aircraft)
- Biomedical Engineering
- Destructive/Nondestructive Testing
- Energy Technology (renewable, fossil, fission, fusion)
- Explosives Engineering
- Fluid Mechanics
- Heat Transfer
- Homeland Security (sensors, analysis, access control)
- Infrastructure Analysis (borders, utilities, transportation)

- Instrumentation and Diagnostics
- Large-scale Testing
- Manufacturing Science and Technology
- Mechanical Systems (design, test, deploy)
- Microsystems Science and Technology (MEMS, LIGA)
- Modeling and Simulation
- Nano Science and Technology
- Process Control
- Robotics
- Transportation Systems
- Solid Mechanics
- Structural Dynamics
- Systems Engineering
- Technical Project Management

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Life-changing careers."



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