

CONCEPT Mechanical engineers design power-producing machines, such as electric generators, internal combustion engines and steam turbines. They also design power-using machines, such as refrigeration, air-conditioning, elevators and escalators.

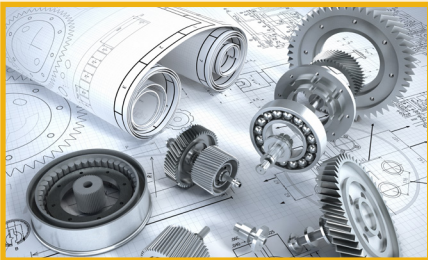
EXAMPLES

Engineering is an extremely diverse profession but is generally divided into various engineering disciplines. These engineering disciplines represent specific focus areas.

Examples of engineering disciplines include Mechanical, Civil, Chemical, Electrical, Bio-Medical, Agricultural, as well as many others. Of these disciplines, Mechanical Engineering is among the most widely practiced and the broadest technically of any of the engineering disciplines.

The State of Nebraska recognizes professional engineering licenses for Mechanical Engineers in three specific areas of expertise including:

MACHINE DESIGN & MATERIALS



THERMAL & FLUID SYSTEMS



HVAC (Heating, Ventilating, and Air Conditioning) AND REFRIGERATION



REAL WORLD CONNECTIONS

Mechanical Engineers are hired by companies in a variety of sectors including automotive, aerospace, manufacturing, as well as many others. More specific to Nebraska, we see Mechanical Engineers employed by many companies throughout the state. Some of the larger companies include: the Nebraska Public Power District (NPPD) representing the power industry, engineering consulting firms such as Olsson founded in Lincoln, manufacturers such as Kawasaki, as well as educational institutions throughout the state.

FORMULAS/DATA

Mechanical Engineers are well schooled in physics, mathematics, mechanics, chemistry, economics, as well as engineering ethics.

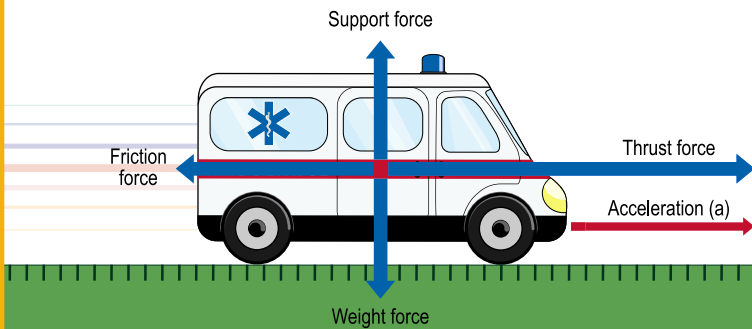
Mechanical Engineers rely on many of the Laws of Physics, for example, Newton's Laws of Motion and the Laws of Thermodynamics.

NEWTON'S 2ND LAW

The net force applied to a body produces a proportional acceleration.

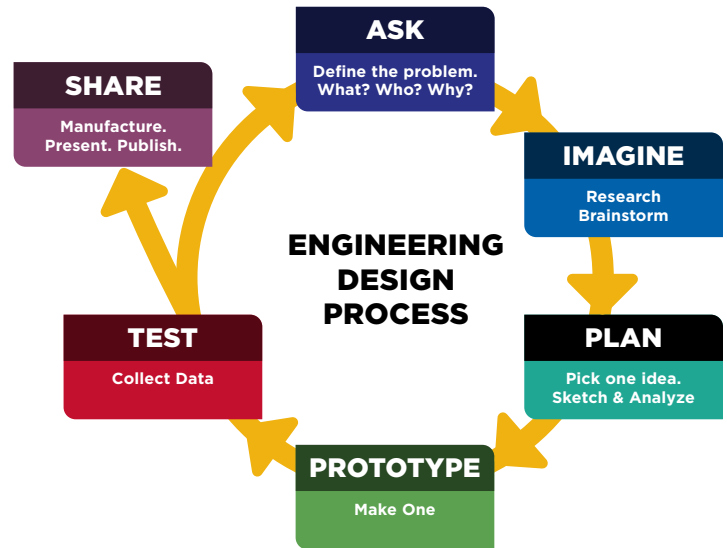
$$F = m \cdot a$$

F - net force
m - mass of the body
a - body's acceleration



Forces are unbalanced. The car accelerates.

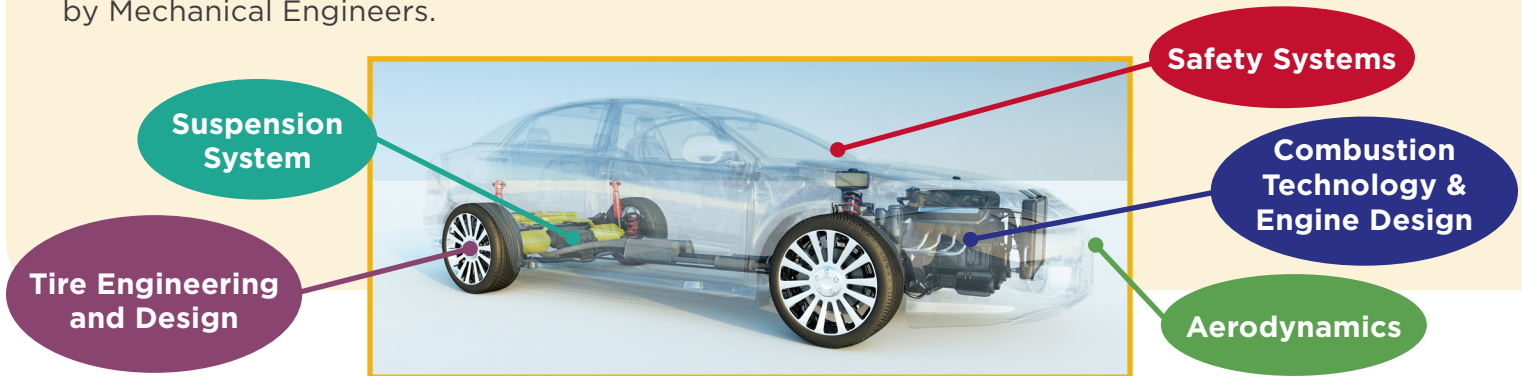
Make sure it measures up



Mechanical Engineers also utilize the Scientific Method and Engineering Design Process to assist them in solving problems. The ability to effectively communicate through both writing and speaking are also very important skills for a successful Mechanical Engineer.

APPLICATION / EXPERIENCE

Mechanical Engineers are an important part of design teams that tackle many real-world problems. Consider the components of an automobile, many of which are designed and tested by Mechanical Engineers.



powered by:



Nebraska Public Power District
 Always there when you need us