Mechanical engineering is a discipline of engineering that applies the **principles** of physics and **materials**science for **analysis**, design, manufacturing, and maintenance of mechanical **systems**The mechanical engineering field requires an understanding of core areas including [mechanics](https://en.wikipedia.org/wiki/Mechanics), [dynamics](https://en.wikipedia.org/wiki/Analytical_dynamics), [thermodynamics](https://en.wikipedia.org/wiki/Thermodynamics), [materials science](https://en.wikipedia.org/wiki/Materials_science), [structural analysis](https://en.wikipedia.org/wiki/Structural_analysis), and [electricity](https://en.wikipedia.org/wiki/Electricity). In addition to these core principles, mechanical engineers use tools such as [computer-aided design](https://en.wikipedia.org/wiki/Computer-aided_design) (CAD), [computer-aided manufacturing](https://en.wikipedia.org/wiki/Computer-aided_manufacturing) (CAM), and [product life cycle management](https://en.wikipedia.org/wiki/Product_life_cycle_management) to design and analyze [manufacturing plants](https://en.wikipedia.org/wiki/Manufacturing_plants), [industrial equipment](https://en.wikipedia.org/wiki/Industrial_equipment) and [machinery](https://en.wikipedia.org/wiki/Industrial_machinery), [heating and cooling systems](https://en.wikipedia.org/wiki/HVAC), [transport](https://en.wikipedia.org/wiki/Transport) systems, [aircraft](https://en.wikipedia.org/wiki/Aircraft), [watercraft](https://en.wikipedia.org/wiki/Watercraft), [robotics](https://en.wikipedia.org/wiki/Robotics), [medical devices](https://en.wikipedia.org/wiki/Medical_devices), [weapons](https://en.wikipedia.org/wiki/Weapons), and others. It is the branch of engineering that involves the design, production, and operation of [machinery](https://en.wikipedia.org/wiki/Machine).[[1]](https://en.wikipedia.org/wiki/Mechanical_engineering#cite_note-1)[[2]](https://en.wikipedia.org/wiki/Mechanical_engineering#cite_note-2)

Mechanical engineering emerged as a field during the [Industrial Revolution](https://en.wikipedia.org/wiki/Industrial_Revolution) in Europe in the 18th century; however, its development can be traced back several thousand years around the world. In the 19th century, developments in [physics](https://en.wikipedia.org/wiki/Physics) led to the development of mechanical engineering science. The field has continually evolved to incorporate advancements; today mechanical engineers are pursuing developments in such areas as [composites](https://en.wikipedia.org/wiki/Composite_material), [mechatronics](https://en.wikipedia.org/wiki/Mechatronics), and [nanotechnology](https://en.wikipedia.org/wiki/Nanotechnology). It also overlaps with [aerospace engineering](https://en.wikipedia.org/wiki/Aerospace_engineering), [metallurgical engineering](https://en.wikipedia.org/wiki/Metallurgical_engineering), [civil engineering](https://en.wikipedia.org/wiki/Civil_engineering), [electrical engineering](https://en.wikipedia.org/wiki/Electrical_engineering), [manufacturing engineering](https://en.wikipedia.org/wiki/Manufacturing_engineering), [chemical engineering](https://en.wikipedia.org/wiki/Chemical_engineering), [industrial engineering](https://en.wikipedia.org/wiki/Industrial_engineering), and other engineering disciplines to varying amounts. Mechanical engineers may also work in the field of [biomedical engineering](https://en.wikipedia.org/wiki/Biomedical_engineering), specifically with [biomechanics](https://en.wikipedia.org/wiki/Biomechanics), [transport phenomena](https://en.wikipedia.org/wiki/Transport_phenomena), [biomechatronics](https://en.wikipedia.org/wiki/Biomechatronics" \o "Biomechatronics), [bionanotechnology](https://en.wikipedia.org/wiki/Bionanotechnology" \o "Bionanotechnology), and modeling of biological systems.

Books of elements of mechanical engineering are below:

1.Birinder Singh

2.S.Chand

3.Dr.Ds.Kumar

4.V.K. Manglik

5.J.K.Gupta