

*Benha University*  
*Shoubra Faculty of Engineering*

*Mechanical Department*  
*Preparatory year.*

# History of Engineering Sciences

17.02.2020 – Week 2

Dr. Mahmoud Khedr

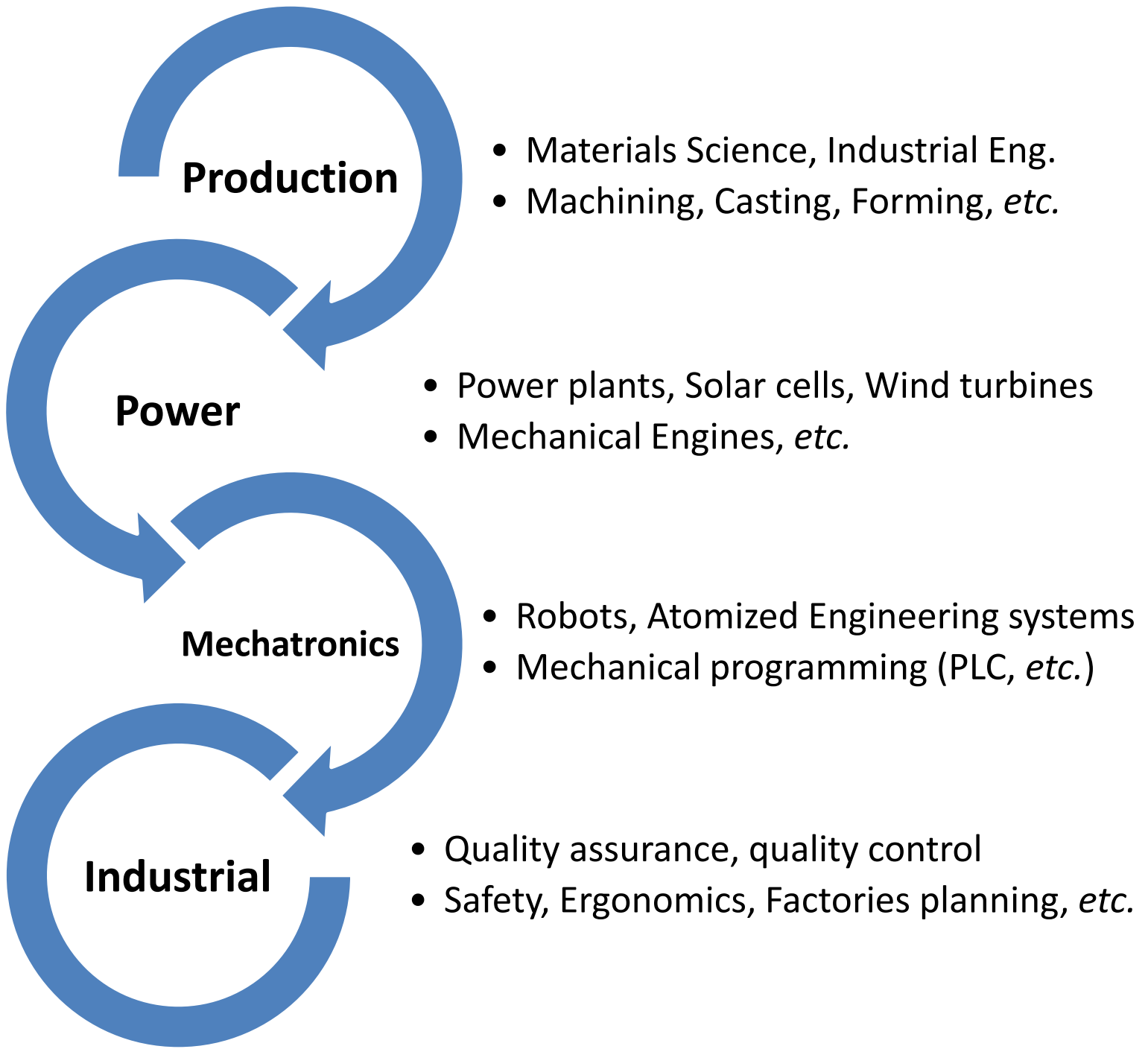
# Engineering

- The application of science to the optimum conversion of the resources of nature to the uses of humankind.
- Engineering is based principally on physics, chemistry, and mathematics and their extensions into materials science, solid and fluid mechanics, thermodynamics, transfer and rate processes, and systems analysis.

# History Of Engineering

- The first engineer known by name and achievement is *Imhotep*, builder of the Step Pyramid at *Şaqqārah, Egypt*, probably in about 2550 BC.
- Imhotep's successors—Egyptian, Persian, Greek, and Roman—carried civil engineering to remarkable heights on the basis of empirical methods aided by arithmetic, geometry, and a smattering of physical science.

# Mechanical Engineering



# History of Mech. Eng.

- Pharaohs history



# Old Production Eng. processes

- Forging: knives, blades.



- Casting: Masks



# Production Eng. branches



# Production Eng. branches

- **Welding** (Arc, Gas, Laser, *etc.*)
- **Sheet metal forming** (Bending, Spinning, *etc.*)
- **Bulk forming** (Rolling, Forging, Extrusion, *etc.*)
- **Machining** (Turning, Milling, Drilling, *etc.*)
- **Casting** (Sand- Metal-molds, Wax, *etc.*)
- **Mech. design** (Gearbox, Crane, Furnaces, *etc.*)
- **Materials Science** (Metallurgy, Materials char.)
- **Ceramics, Automobile, Ship and Aerospace industries.**



# Job opportunities

- It is based on the selected division or specialization.

