

This course will focus on the anatomy and physiology of human beings

- The human body has 12 organ systems
  - √ Each organ system is made of organs
  - √ Organs are made of tissues
  - √ Tissues are made of cells
  - √ Cells are made of atoms and molecules

[Figs 1.3, 1.4, and 1.5](#)

## Anatomy

The study of the names, structures and locations of organs

## Physiology

The study of how organs function

- Much of physiology is the chemistry of the body (how the body uses molecules and atoms)

Homeostasis

The body's ability to steadily maintain internal conditions (such as temperature, pH, and nutrient concentrations) at healthy set points

- Examples: Normal body temperature =  $37^{\circ}$   
Normal blood pH = 7.4  
Normal sodium concentration = 3.2 grams per liter
- Proper health requires keeping each internal condition at its set point.
  - √ Disorders, diseases, and injuries are harmful because they cause loss of homeostasis
- The body maintains homeostasis using antagonistic processes (antagonistic processes = opposing processes)
  - √ There are normally two antagonistic processes that control each internal condition's level
  - √ One process increases the condition's level if it is too low
  - √ The other process decreases the condition's level if it is too high

Fig 1.10