

What is Physics?

- Ancient Greek: φύσις - *physis* - "nature"
- *natural science* that involves the study of **matter** and its motion through space and time, as well as all related concepts, including **energy and force**
- more broadly, it is the general analysis of nature, conducted in order to understand **how the universe behaves**
- it is concerned with objects of **all sizes**, from the universe itself down to the scale of the atoms
- it is concerned with **times** ranging from the first few nanoseconds of the beginning of the universe to the ultimate fate of the universe

- Physics is an *empirical* science - we try to understand nature through observation and experiments

29:011 College Physics I

- **Mechanics** - how and why things move - laws of motion; forces, **gravity**
- **Wave motion** - water, strings, springs, and sound waves
- **Thermodynamics** - study of heat and work and the conversion of one into the other

29:012 College Physics II

- Electricity and Magnetism
- Electromagnetic waves, light, and optics
- Modern Physics (after 1900)