

# Mesleki Yabancı Dil 1 Dersi

Ankara Üniversitesi Elmadağ Meslek Yüksekokulu

Öğretim Görevlisi : Murat Duman

Mail: [mduman@ankara.edu.tr](mailto:mduman@ankara.edu.tr)

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Hafta 2

# THE ELECTRIC CURRENT

- Like, or similar charges repel each other, whereas unlike, or opposite charges attract each other. Thus, charged particles within a material are in the state of constant movement. But, when some external forces act on them, these charged particles may be made to move continuously in the same direction for some time. Such continuous movement is an electric current.
- In 1862, Georg Simon Ohm, found the connection between the three values on which the transfer of electricity from one end of the conductor to the other depends. These three values, voltage, current and resistance led to the postulation of the fundamental law in electricity: Ohm's law.
- Voltage (V), is the force or pressure that moves electrons through a conductor.
- The current will flow through the conductor from the negative end to the positive one.
- The greater the number of free electrons in the conductor, the lower is its resistance.

- The resistance of a conductor depends on the material of which the conductor is made, the cross-section of the conductor, the length of the conductor and the temperature of the conductor.
- The greater the potential difference, the larger the quantity of electrons flowing through the conductor – the greater the resistance, the smaller the quantity of electrons.
- The unit of the intensity is the ampere.
- The relationship between the voltage (V), the current (I), and the resistance (R) is stated in Ohm's law:  $I = \frac{V}{R}$ .
- The greater the voltage (R = constant), the greater will be the current.
- The greater the resistance (V = constant) the smaller the current.
- The current is directly proportional to the voltage and inversely proportional to the resistance.