

$$F = G \frac{m_1 m_2}{d^2}$$

Ankara Yıldırım Beyazıt University
Energy Systems Engineering Laboratories

$$\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h}$$



ENERGY SYSTEMS LABORATORY



Focuses on practical applications of thermodynamics, fluid mechanics, and heat transfer.



Involves experiments with energy conversion systems such as internal combustion engines, turbines, and solar collectors.



Allows measurement and analysis of system efficiency, energy flow, and thermal properties.



Teaches the operation and performance evaluation of renewable energy systems (solar, wind, geothermal).



Encourages data interpretation and reporting skills through lab experiments and technical documentation.



Prepares students for real-world challenges in designing and optimizing energy systems.

ENERGY SYSTEMS LABORATORY

- Air Conditioning Experiment
- Current and Voltage Characteristics of Solar Cells
- Examination of Characteristic of Solar Cell & Off Grid Solar Energy Systems With AC Load Connection
- Examination of Parallel Connected Solar Energy Current-Voltage Values
- Flow Measurement Experiment
- Fluid Machinery and Pelton Turbine Experiment
- Heat Conduction, Convection & Radiation Experiment
- Serial and Parallel Pumps Experiment
- Wind Turbine Experiment



ELECTRIC & ELECTRONICS LABORATORY



Introduces fundamental electrical and electronic components (resistors, capacitors, inductors, diodes, transistors).



Provides hands-on experience with circuit building and analysis.



Teaches use of measurement instruments such as multimeters and oscilloscopes.



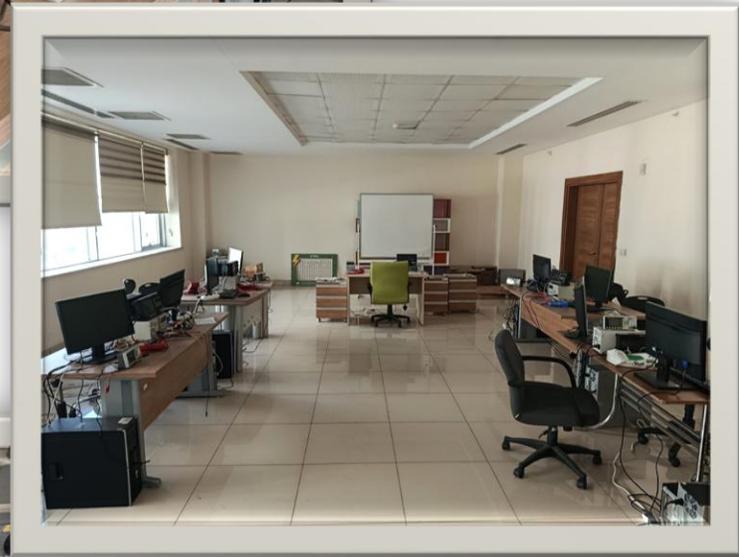
Develops skills in using simulation tools for circuit design and testing.



Supports understanding of energy conversion, control systems, and renewable energy applications.



Prepares students for advanced courses and practical work in energy systems engineering



COMPUTER LABORATORY



Provides training in engineering software such as MATLAB, AutoCAD, SolidWorks.



Teaches basic programming and algorithm development relevant to energy system modeling.



Supports simulation and analysis of energy systems, including thermal, electrical, and renewable technologies.



Enhances skills in data processing, visualization, and reporting.



Encourages development of control systems, optimization techniques, and digital modeling.



Prepares students for computational tasks in design, analysis, and research projects.

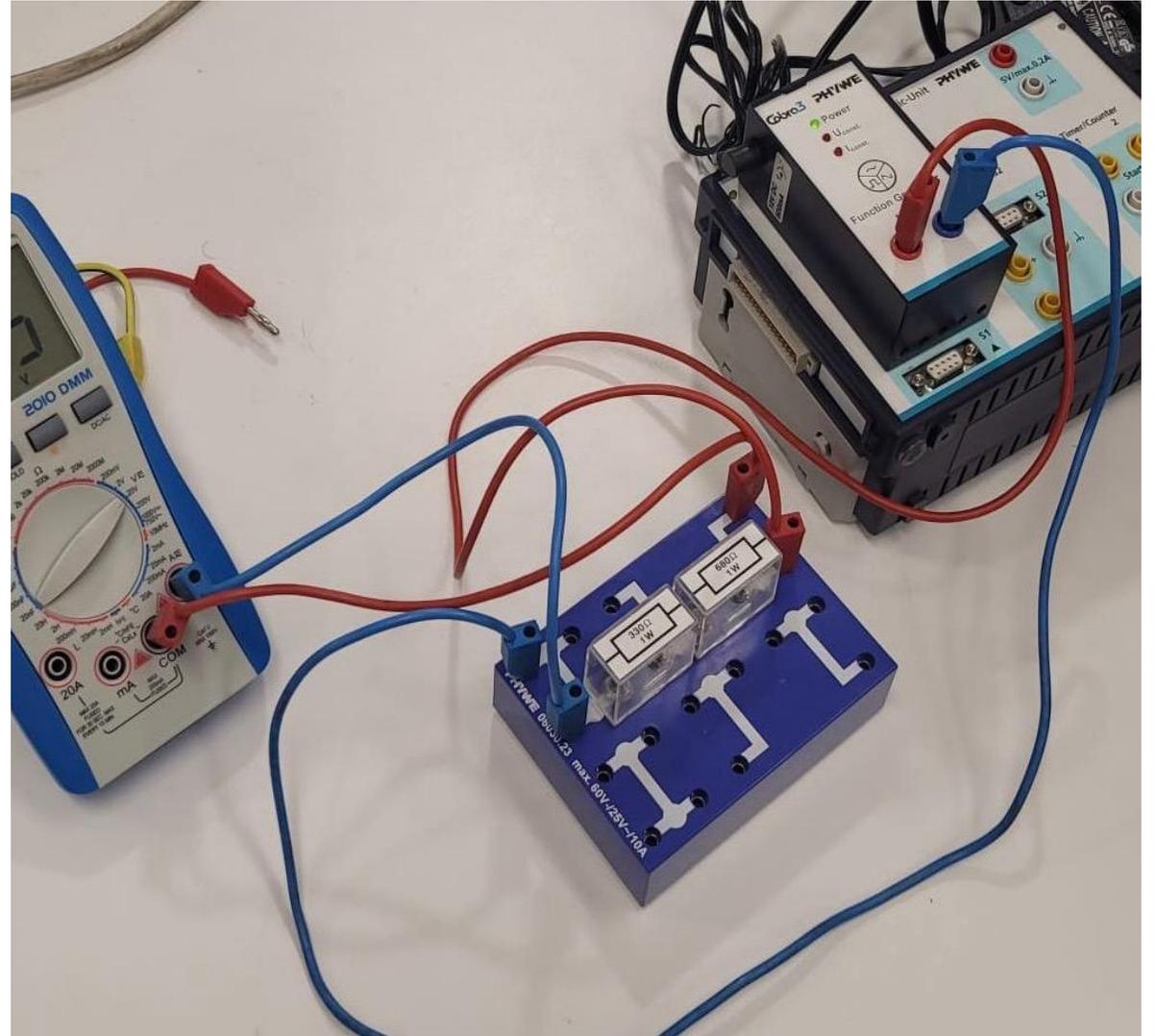
PHYSICS LABORATORY - I

- Measurement Experiment
- Elasticity Modulus
- Hooke's Law
- Newton's Second Law
- Moment of Inertia and Angular Acceleration
- Projectile Motion
- Conservation of Mechanical Energy



PHYSICS LABORATORY -II

- Ohms Law
- Wheatstone Bridge
- Dielectric Constant
- Charging Curve of a Capacitor
- Magnetic Field of Coils
- Magnetic Induction
- Earth's Magnetic Field
- Transformers



知りたいと思う心
が学びの始まり

THE DESIRE TO
KNOW IS THE
BEGINNING OF
LEARNING

*A Traditional Japanese proverb

