

Digital Electronics Laboratory

(Location: Electrical Engineering Department, ground floor)

1- Lab Photos



Photo 1



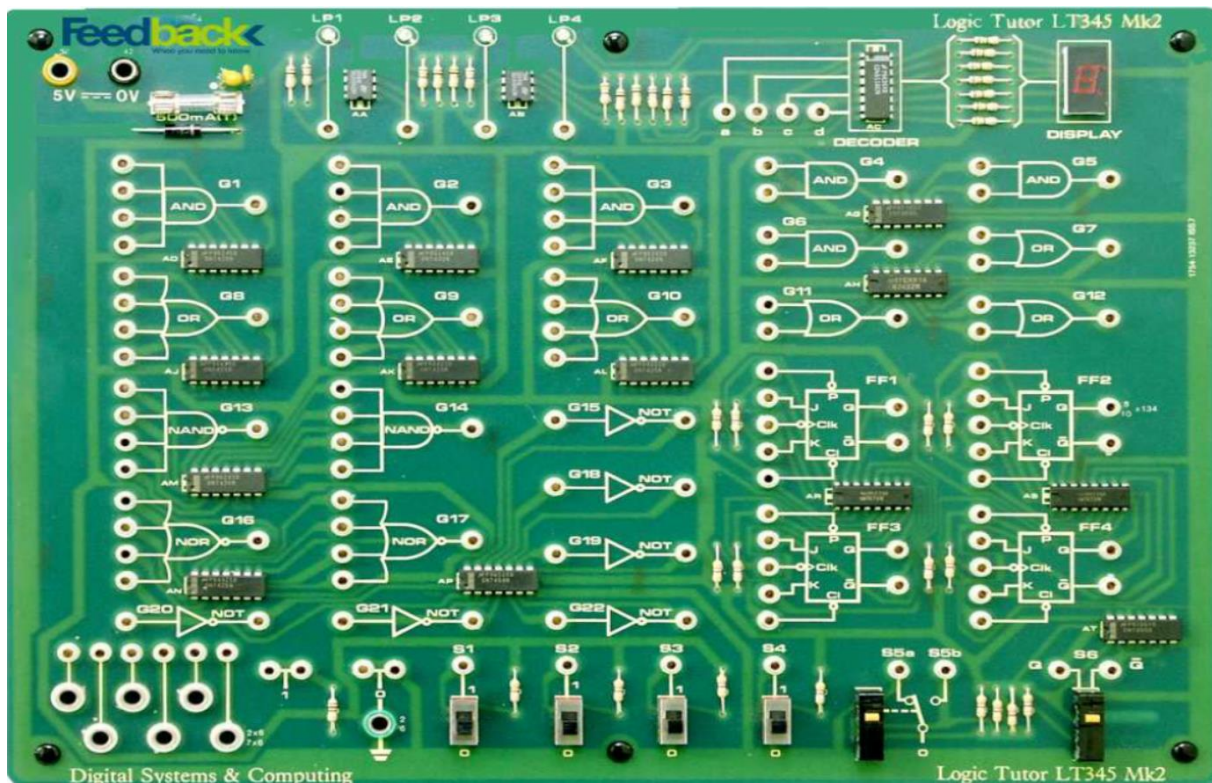
Photo 2

2- Lab Description

The Digital Electronics lab is used to teach the practical part of the courses of Digital Electronics and Computer Engineering for students of the second and third levels of the Electrical Power Engineering and Machines Program. It is also used in teaching the laboratory part of Electrical Power Engineering courses for students of the other programs.

3- Lab Equipment

The following is a table of equipment and devices that are used in the experiments.



Logic gates board

Input : 5 V DC

Model LT345 Mk2



DC Power supply
Input : 220 V AC
Output : +5 V, +/- 15 V DC
Model Feedback Power Supply 01-100



Power Supply

DC Fixed outputs: + 5 V, \pm 12 V, 1 A.

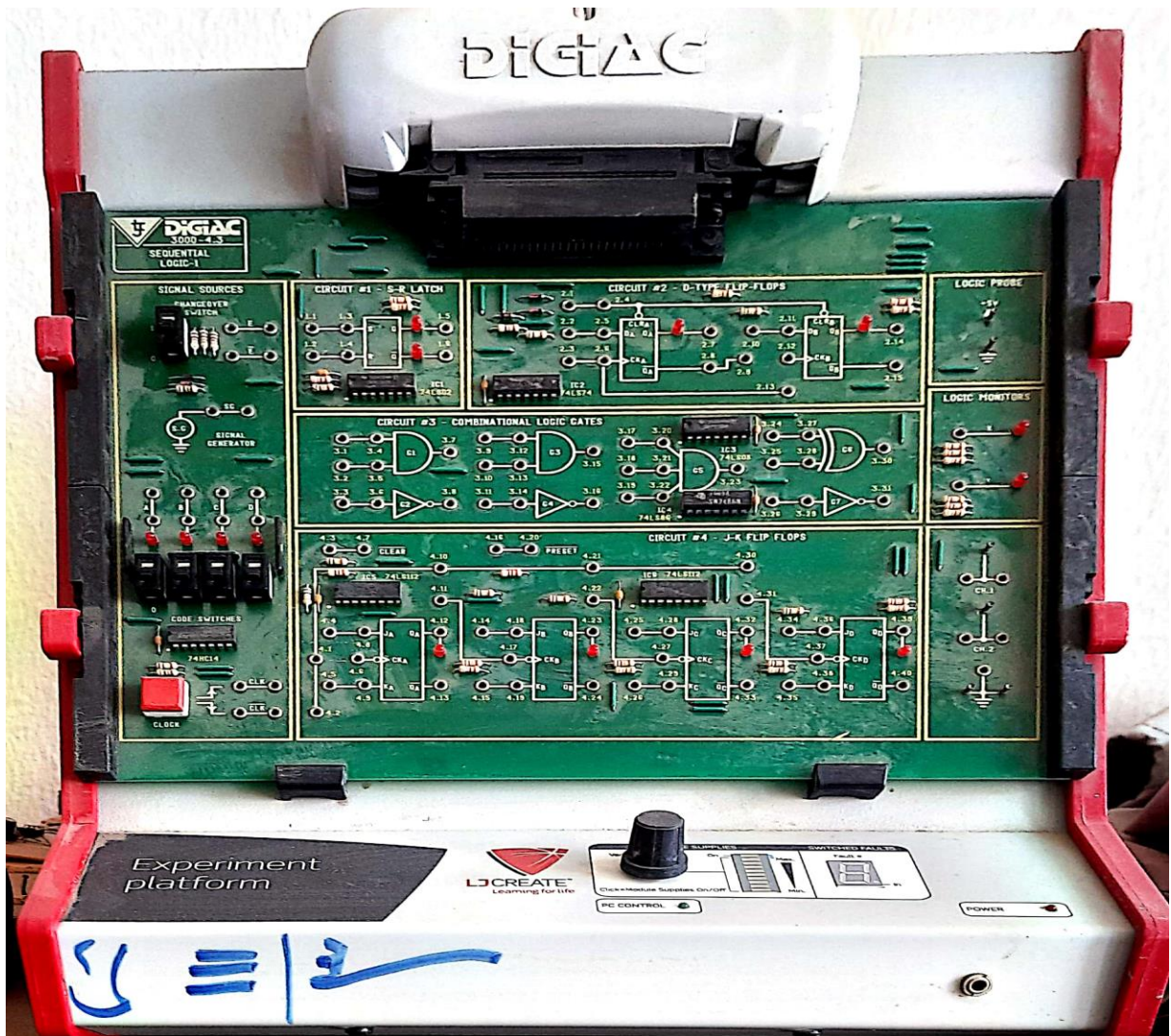
DC Variable outputs: \pm 12 V, 0.5 A.

AC Outputs: 12 V or 24 V.

Power: 110/220 VAC

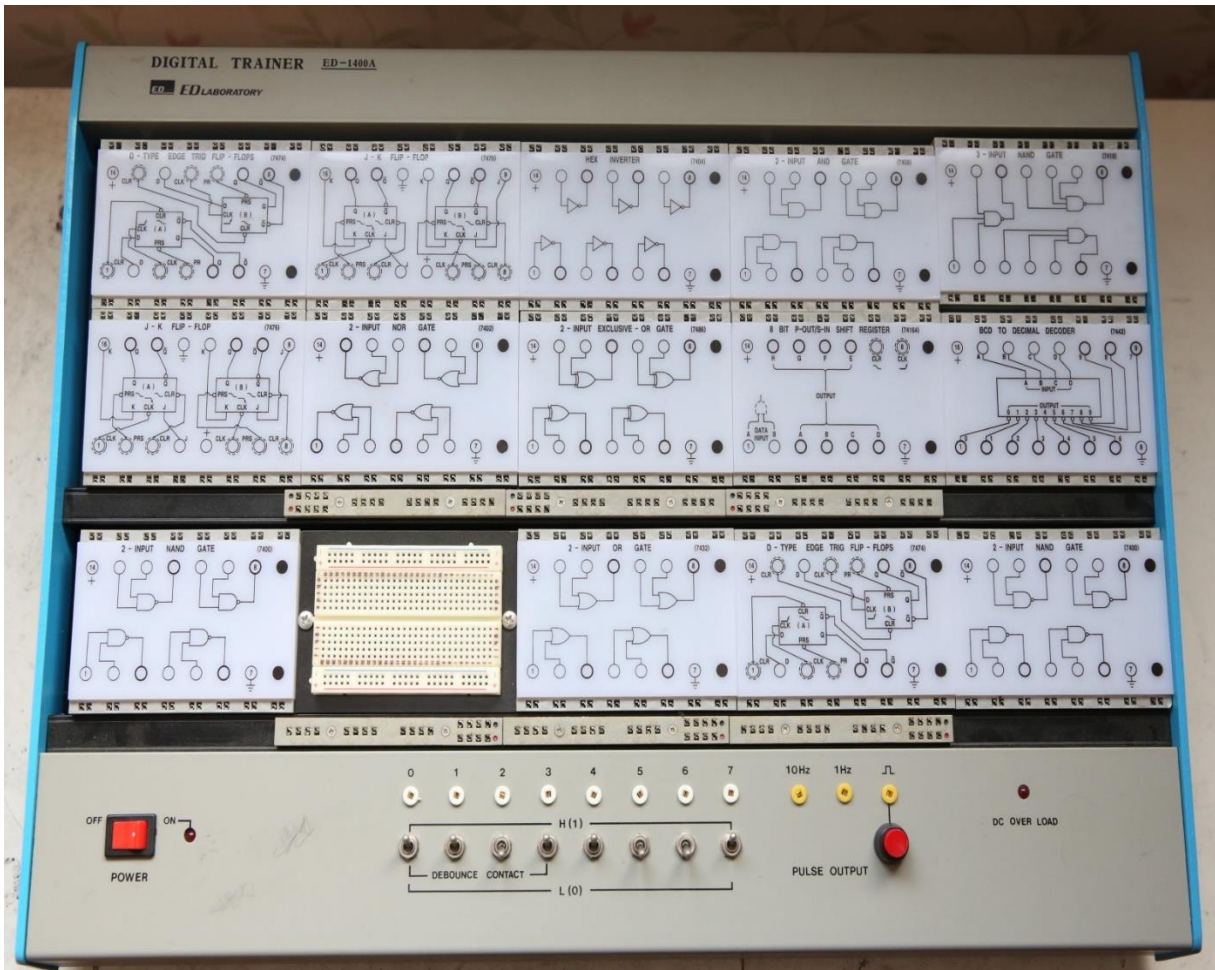
Frequency: 50/60 Hz.

Module FACO power supply

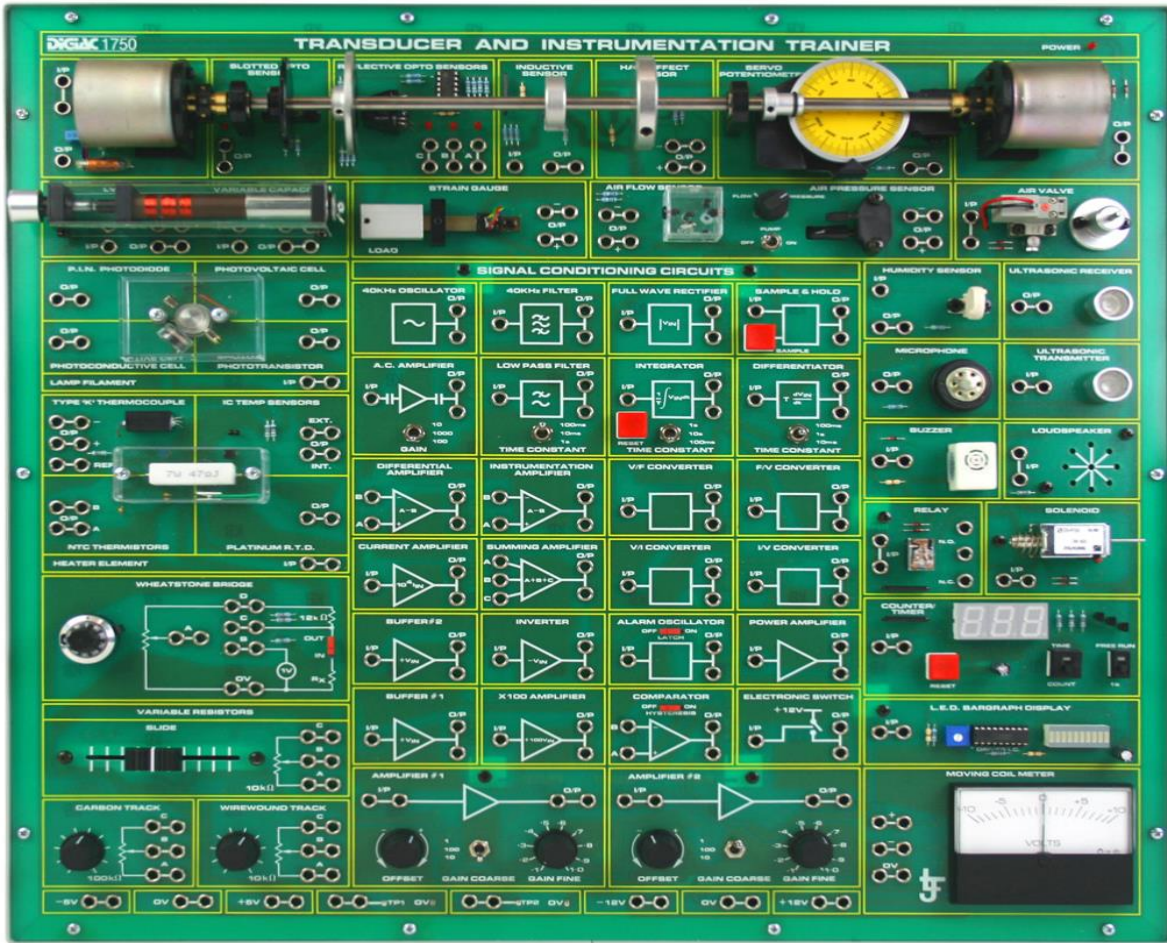


DIGIAC power supply and board
Outputs: 0-12V Variable DC
+/- 5V DC
+/- 12V DC
12-0-12V 50/60 Hz AC
Module DIGIAC 3000 Exp Experiment Platform

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Logic Function Trainer circuit
Input Voltage : AC 220V 50Hz/60Hz
DC Output : +5V 1A
Model ED-1400A



Transducers and Instrumentation Trainer

Internal Power Supplies:

-5V, +5V 1A precision supply

-12V, +12V 1A regulated supply

Module DIGAC 1750

4- Lab Experiments

First year:

Course: None

Code: None

Second year:

Course: Digital Electronics

Code: ELE222

- 1- Exp-1: Logic Inverter. 1- The operation and characteristics of the discrete component and integrated circuit logic inverters.
- 2- Exp-2: Diode logic gates. 1- Operation of diode AND and OR gates.
- 3- Exp-3: TTL logic gates. 1-The operation of any of the three basic logic functions.
- 4- Exp-4: Applying NAND and NOR gates.
- 5- Exp-5: Full-Adder and full-subtractor.
- 6- Exp-6: Set-reset flip-flops.
- 7- Exp-7: JK flip-flops.

Third year:

Course: Computer Engineering

Code: ELE324

- 1- Mini projects.

Fourth year:

Course: None

Code: None

5- Lab Maintenance

The laboratory is evaluated to determine the experiments and their readiness to participate in the teaching process and to determine the required maintenance periodically, and the capabilities and problems of the laboratory are periodically reported after each experiment.