Hardware

- Computer Labs
- Datacenter

Computer Labs

DEEC has a set of didactic laboratories, prepared with a set of workstations to support teaching activities, connected to the local network.

Computers, as an essential support tool, are equipped with the necessary software for the different subjects taught.

To this end, there are 8 laboratories, equipped with a total of 133 workstations, installed with Windows and / or Linux operating system, distributed as follows:

Initials	Laboratory	Nº of computers
LAI 1	Laboratório de Apoio Informático 1	20
LAI 2	Laboratório de Apoio Informático 2	20
LAI 3	Laboratório de Apoio Informático 3	30
LMI	Laboratório de Medidas e Instrumentação	12
LSD	Laboratório de Sistemas Digitais	15
LSRC	Laboratório de Sistemas e Redes de Computadores	20
LT	Laboratório de Telecomunicações	5
LH	Laboratório de Hiperfrequências	5

Teachers may request the installation of additional software at any time through the helpdesk@deec.uc.pt service. At the beginning of each semester, requests must be made in advance, as these are times with high requests.

Datacenter

A Data Processing Center, or Datacenter, is where an organization's data processing and storage equipment is concentrated.

They are usually designed to be secure and house servers and databases and file storage, processing large amounts of information.

In 2008, DEEC invested in the creation of a new Datacenter to improve the operating conditions of its information systems.

The Datacenter was designed from the ground up, consisting of several technical components:

- Power (including redundant power systems)
- Climatization
- Connectivity (Network)
- Servers
- Storage Systems

All of these components are mounted in a room protected against unauthorized access, with electrical and data cable routing mechanisms, metal enclosures (racks) where equipment is mounted and a fully controlled environment.

The climate control system is composed of a double redundant precision air conditioning system with constant monitoring, keeping the temperature constant and cooling the equipment. It has fault control and switching systems to extend their life, as well as to avoid problems in the event of individual component failure.

The power supply, in addition to operator power, uses large, rack-mounted uninterruptible power supplies (UPS) to keep equipment powered on even in the event of a power failure. Active equipment (servers, switches, etc.) is also purchased from redundant sources to guarantee alternative power supply paths in the event of individual component failure.

The Datacenter currently has the following approximate specifications:

- 27 power supply circuits, totaling a maximum of 100A;
- 8 UPS with total capacity exceeding 20,000VA;
- 2 air conditioning systems with a total of 40,000 BTU;
- 8 switches, providing a total of 216 ports, with individual speeds of 1Gbps and 10Gbps in copper and fiber optic technology;
- Connection to 8 existing floor racks in the fiber optic building, with reductive paths;
- External fiber optic connection with a cumulative total of 10Gbps bandwidth;
- 55 physical servers;
- 43 virtual servers running on 4 hypervisors over SSD shared storage;
- More than 150 CPU cores and 1TB more RAM distributed across different servers;
- Total gross storage capacity greater than 24 TB on 2 storage systems;