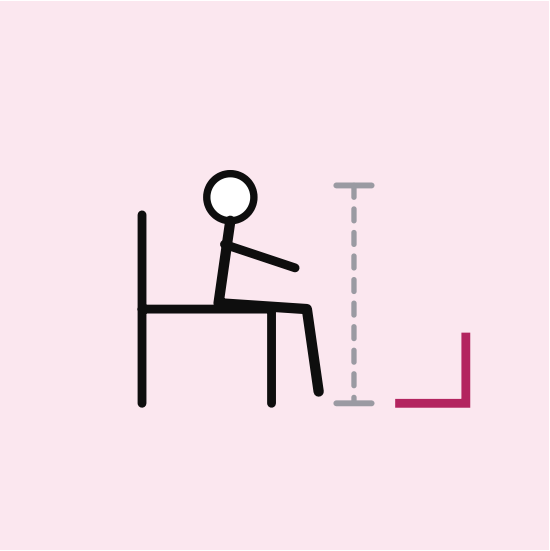
Field

Ergonomics and human factors

Studies the interaction between people and the other elements of a system, and applies that knowledge to design to improve well-being and performance.



In Spanish

Ergonomía y factores humanos

Origin

Took shape around World War II; in industrial design, Dreyfuss (1955)

What it studies

How to adapt objects, workstations and systems to people's measurements, strength, perception and limits. For design, it provides data on the human body and methods to prevent errors and injuries.

Principles

Made to fit people

Real measurements, for the widest possible range of bodies.

Body, mind and organization

Physical, cognitive and organizational ergonomics.

Prevent error

Make mistakes hard to make and mild in their consequences.

Applications in design

✓ Use it like this

Design with measurements of real people, from the smallest to the largest.

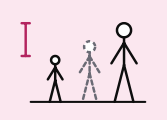
✗ Avoid

Designing for an "average" person who doesn't exist.

👁 Don't fall for it

If people often make mistakes with an object, review the design before blaming the person.

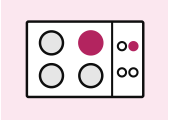
Theories and concepts



Concept

Anthropometry

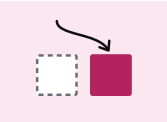
Measuring real bodies so a design works for nearly everyone, not for an average person.



Concept

Stimulus–response compatibility

We respond faster and better when controls are laid out like the things they control.

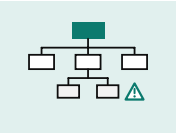


Concept

Slips and mistakes

Failing to do what you meant is not the same as planning badly, and each error needs a different fix.

Methods and tools



Method

Hierarchical task analysis (HTA)

Breaks a task down into goals and subgoals, with the plan that says in what order they're done.

Connections

Campos cercanos

- Human-computer interaction (HCI)
- Cognitive psychology
- Fitts's law

Used in

- Automotive HMI design
- Interior design
- Furniture design
- Packaging design
- Transportation design
- Wearable design
- Inclusive design
- Industrial design
- Design for health
- XR design (extended reality)

Authors and works

2000	**International Ergonomics Association**	Defined ergonomics as a scientific discipline and as a profession, with three domains: physical, cognitive and organizational.
1955	**Henry Dreyfuss**	Brought human body data into industrial design with his reference figures, Joe and Josephine.

Sources

Original sources

- International Ergonomics Association (2000). Definition and domains of ergonomics. IEA. View source (https://iea.cc/about/what-is-ergonomics/)
- Dreyfuss, H. (1955). Designing for people. Simon & Schuster.

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