

ECSE 310. THERMODYNAMICS OF COMPUTING.

Credits: 3

Offered by: Electrical & Computer Engr (Faculty of Engineering)

Terms offered: Fall 2025, Winter 2026

View offerings for Fall 2025 or Winter 2026 in Visual Schedule Builder.

Description

An introduction to thermodynamics from the perspective of computer engineering. The first and second laws of thermodynamics; elementary information theory (bits, entropy); energy storage and dissipation in electrical circuits; effects of noise in switching circuits; the fluctuation-dissipation theorem; Landauer's principle; reversible and irreversible computation; energy costs of communication; thermal resistance, heat sinking, and cooling technologies for computing circuits.

- Prerequisite(s): ECSE 200, ECSE 205, and ECSE 222
- (3-2-4)

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