

# **Week 1**

**Course Outline**

**Digital Concepts**

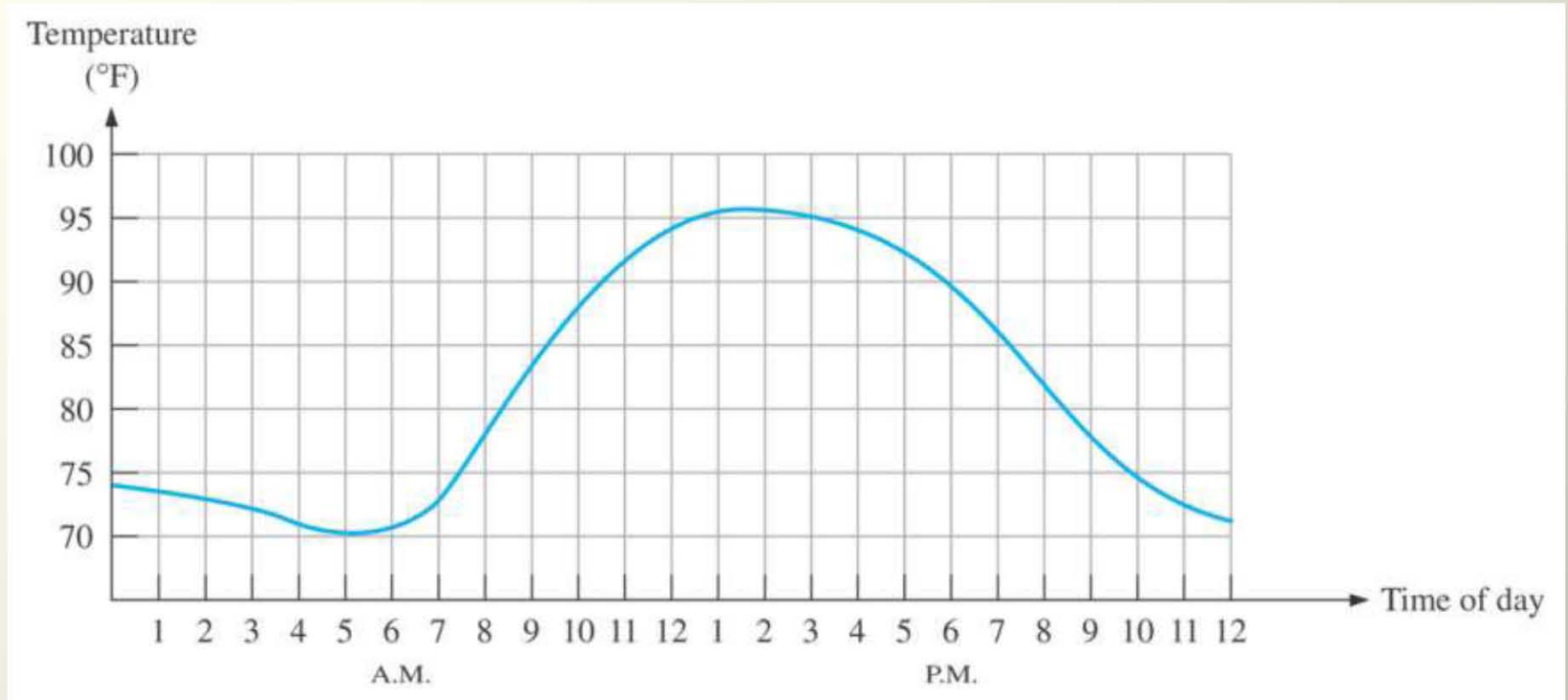
**Binary Numbers**

# **Logic Circuits Course**

**Ch. 1**  
**Digital Concepts**  
**Binary Numbers**  
**Course Outline**

# Digital and Analog Quantities

**Figure 1-1** Graph of an analog quantity (temperature versus time).



**Figure 1–2** Sampled-value representation (quantization) of the analog quantity in Figure 1–1. Each value represented by a dot can be digitized by representing it as a digital code that consists of a series of 1s and 0s.

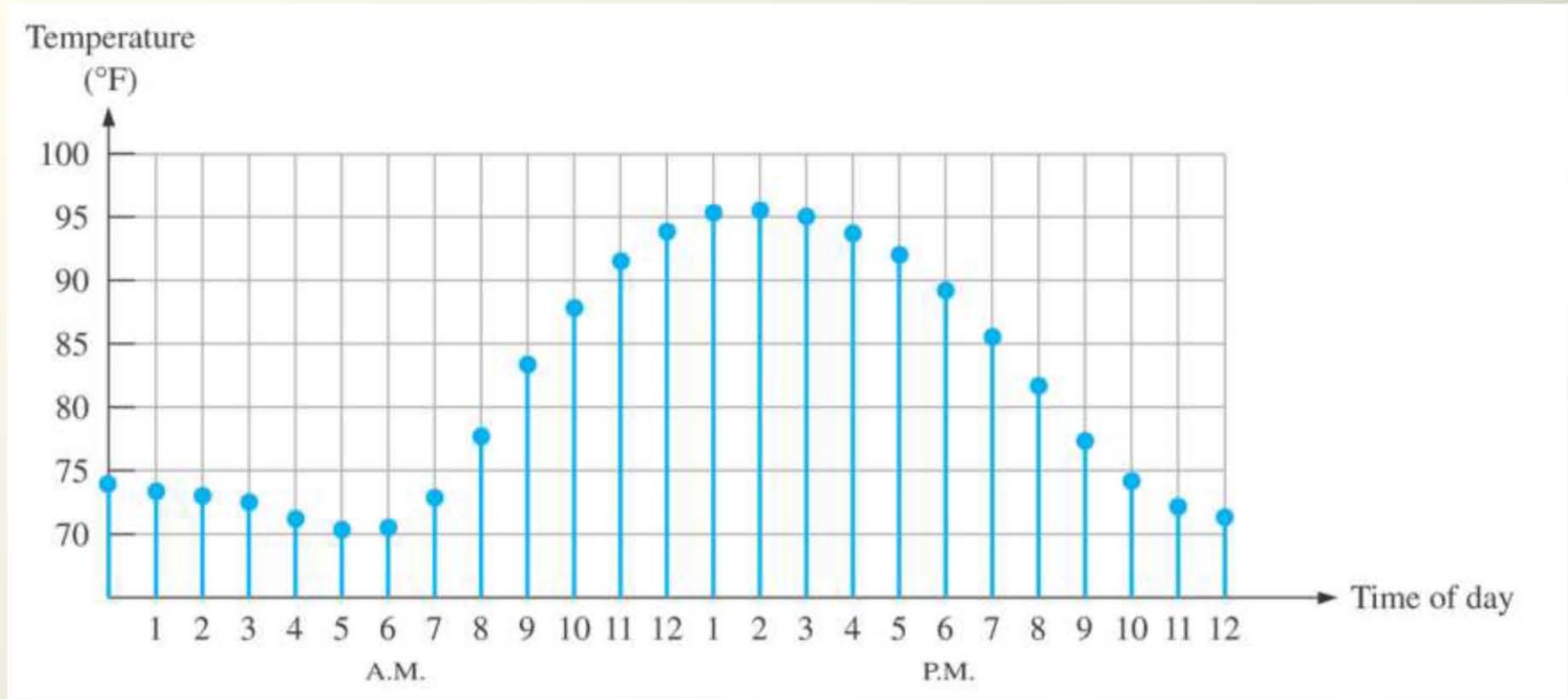
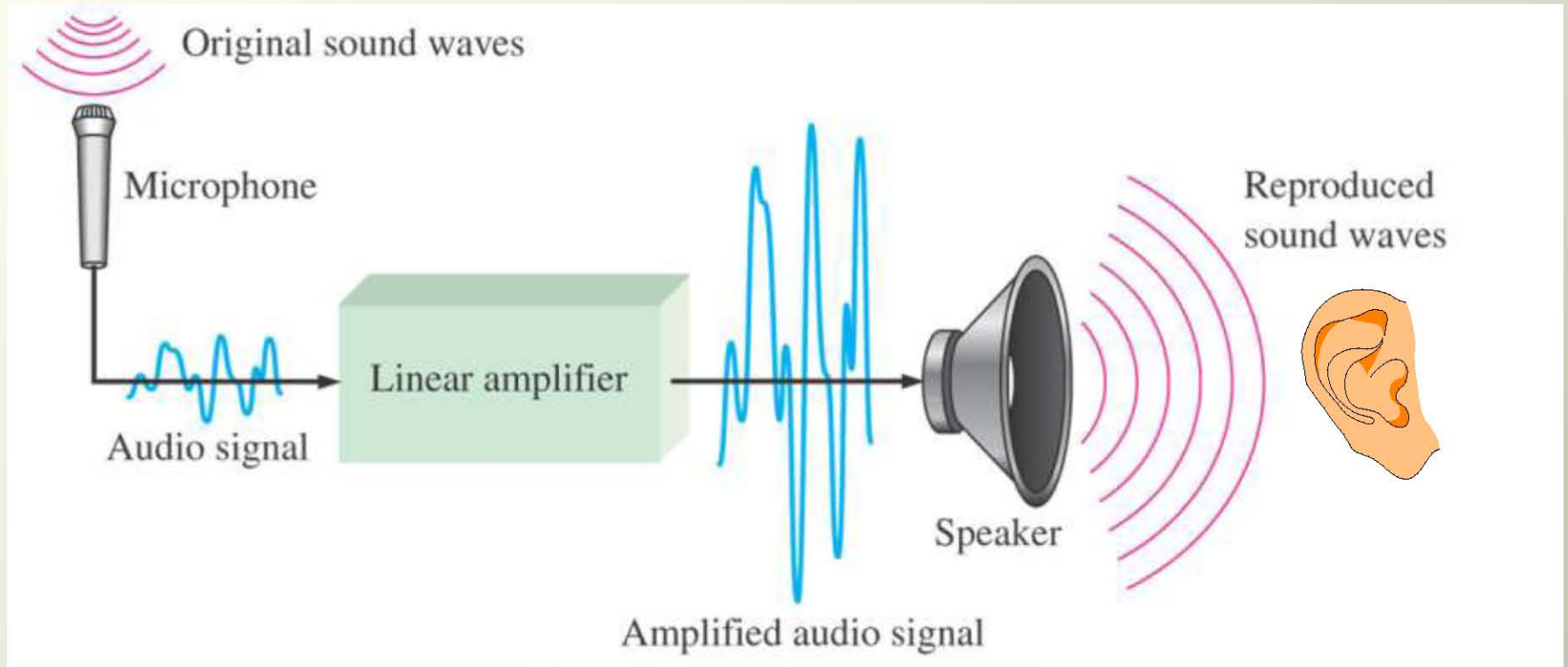
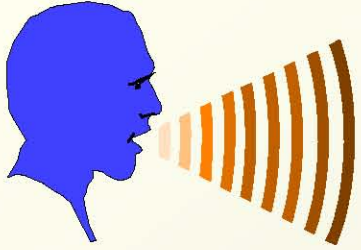


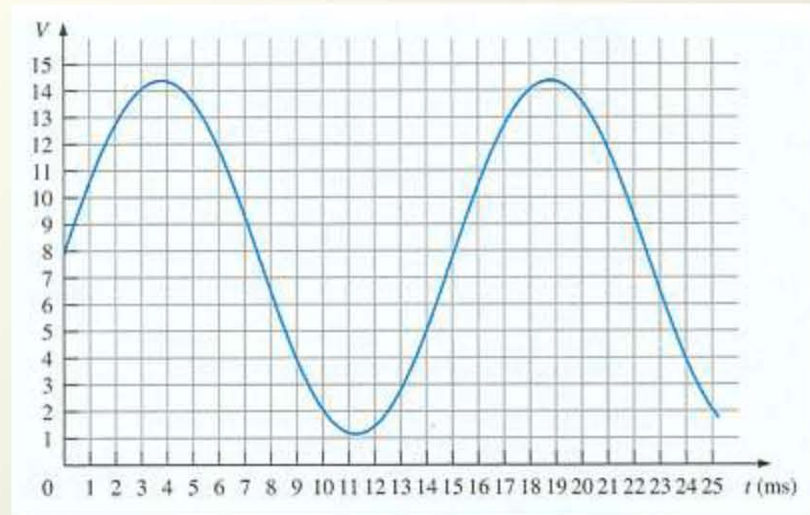
Figure 1-3 A basic audio public address system.



## Digital and Analog Quantities

- Analog quantities have continuous values
- Digital quantities have discrete sets of values

# Digital and Analog Quantities



Analog quantities have continuous values



Digital quantities have discrete sets of values

All physical phenomena are represented by analog signals.



## Digital and Analog Quantities

Types of electronic devices or instruments:

- Analog
- Digital
- Combination analog and digital

Is mobile device analog or digital or combination of them?

**Figure 1-4** Basic block diagram of a CD player. Only one channel is shown.

