



**SNS COLLEGE OF TECHNOLOGY**  
**An Autonomous Institution**  
**Coimbatore-35**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**19ECB301-ANALOG AND DIGITAL COMMUNICATION**

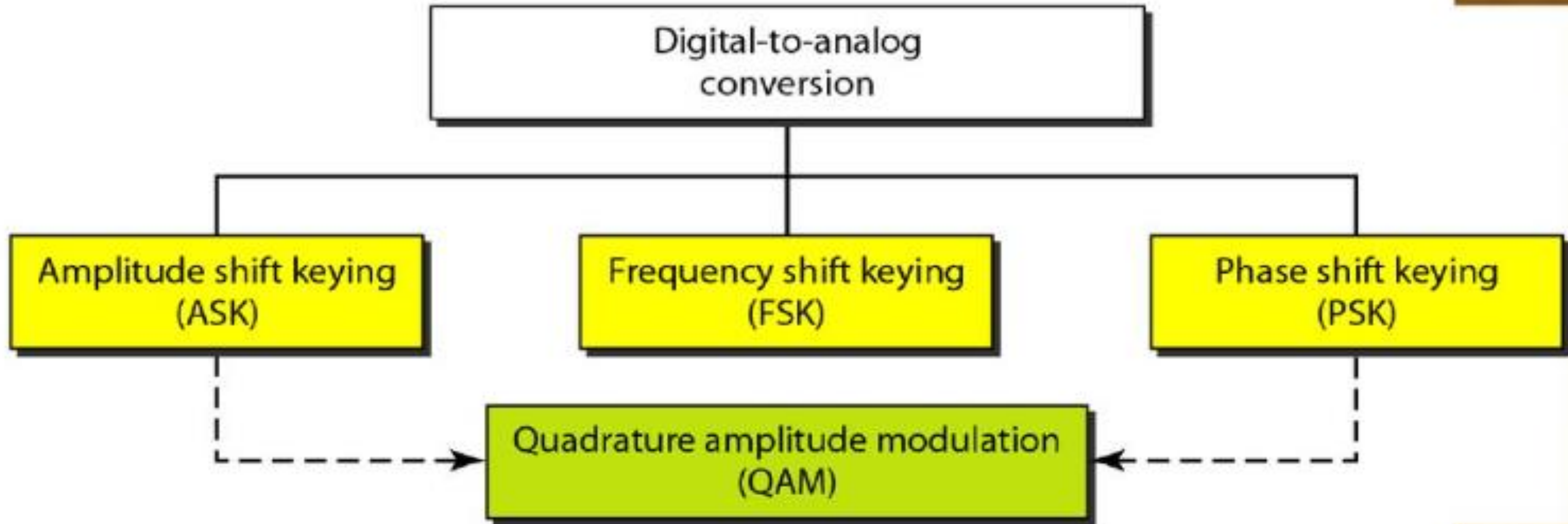
III YEAR/ V SEMESTER

**UNIT 4 – DIGITAL MODULATION TECHNIQUES**

TOPIC – **Frequency Shift Keying (FSK)**



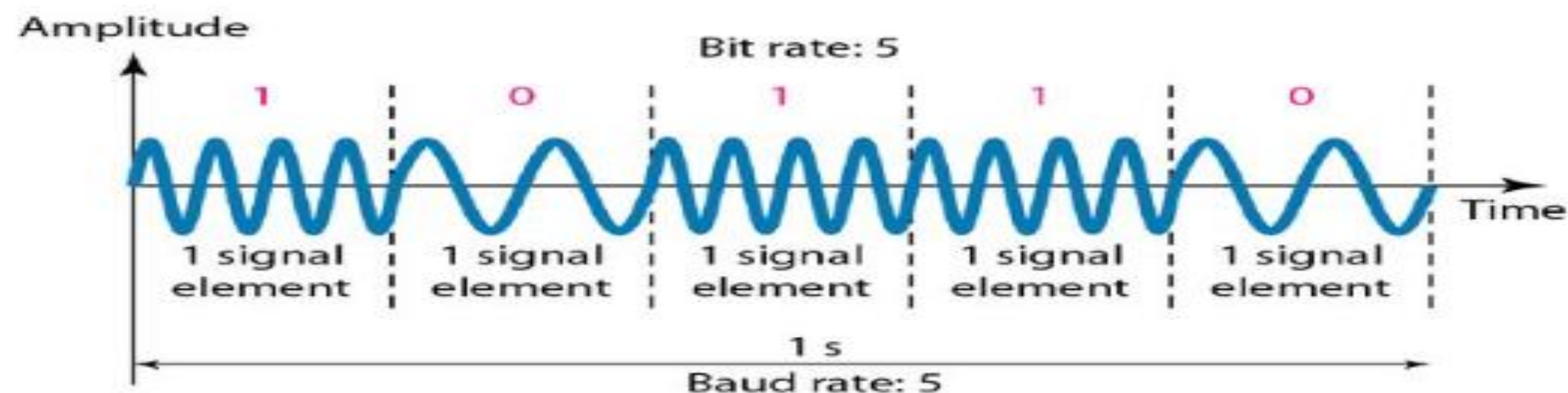
# OUTLINE





## FSK (Frequency Shift Keying)

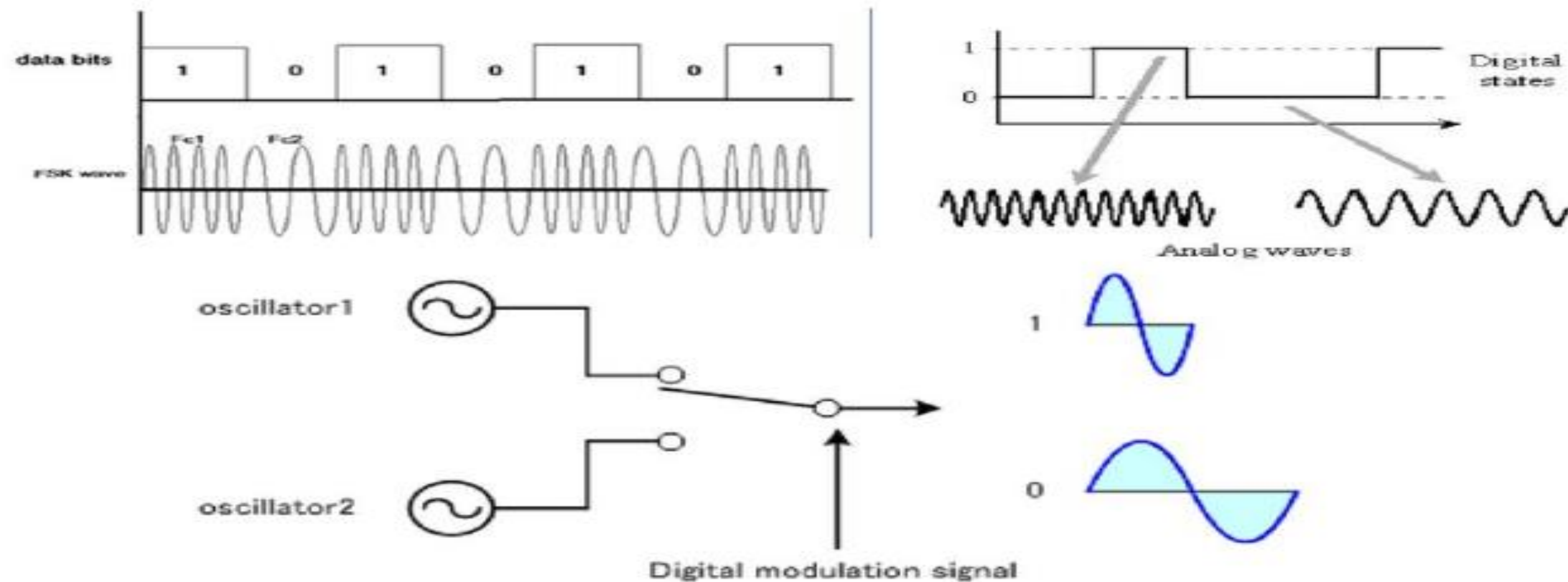
- The frequency of the carrier signal is varied to represent binary 1 or 0.
- Both peak amplitude and phase remain constant while the frequency changes.
- The frequency of the signal during each bit duration is constant, and its value depends on the bit (0 or 1).





## FSK Modulator

- One way to think about binary FSK (or BFSK) is to consider two carrier frequencies



Switch between two oscillators accordingly



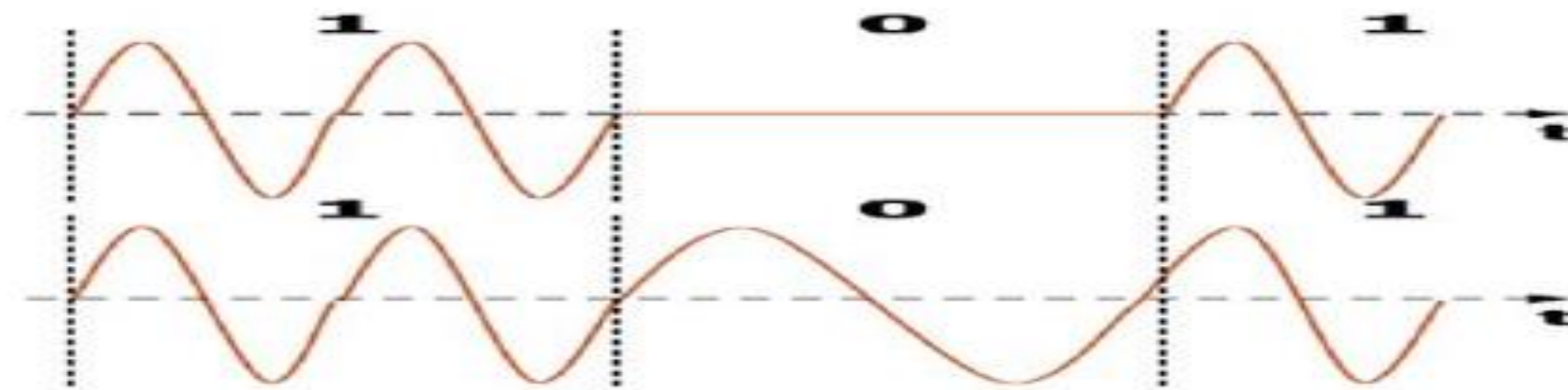
## ASK and FSK

### - Amplitude Shift Keying (ASK):

- 1- Very simple.
- 2- Low bandwidth requirements.
- 3- Very susceptible to interference.

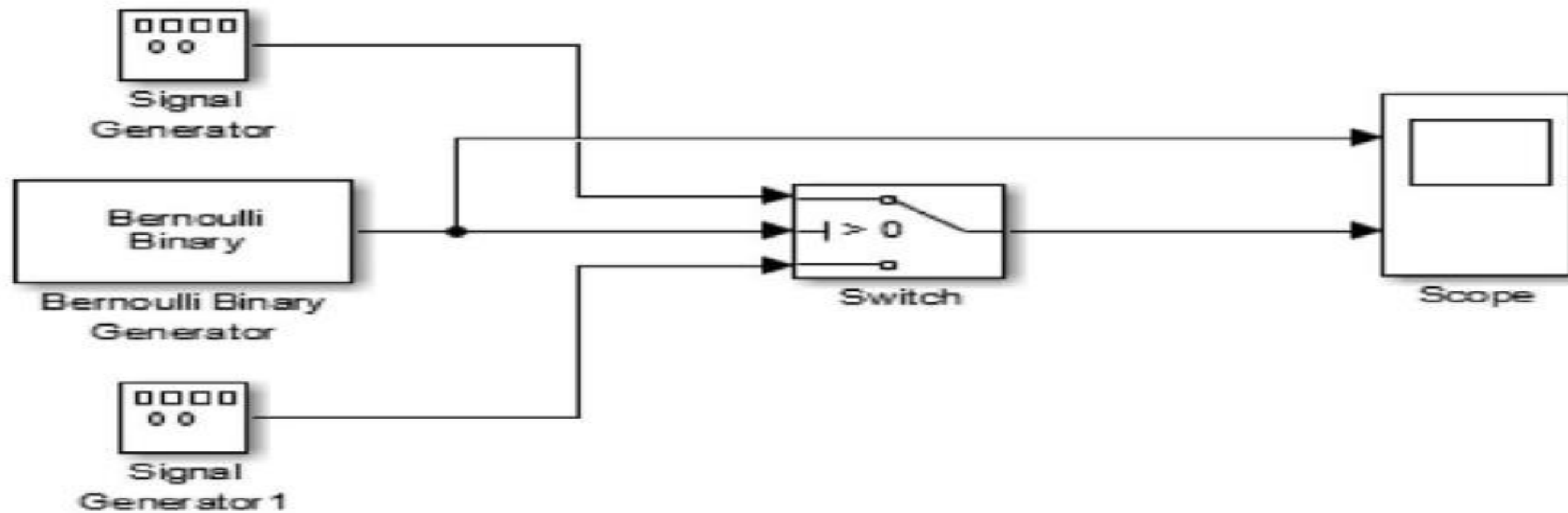
### - Frequency Shift Keying (FSK):

- 1- Needs larger bandwidth.
- 2- More error resilience than AM.





## FSK Modulator



Implement a BFSK modulation that use the following carriers:

- 1-  $f_{c1} = 100 \text{ Hz}$  and  $f_{c2} = 20 \text{ Hz}$
- 2-  $f_{c1} = 180 \text{ Hz}$  and  $f_{c2} = 50 \text{ Hz}$
- 3-  $f_{c1} = 85 \text{ Hz}$  and  $f_{c2} = 30 \text{ Hz}$



**THANK YOU**