Digital Communication (3-0-2-4) - follow up course to CT216
$\qquad$ L T P C

Introduction to Communication
Systems (ICS)

In addition to modules 1,2,3, we
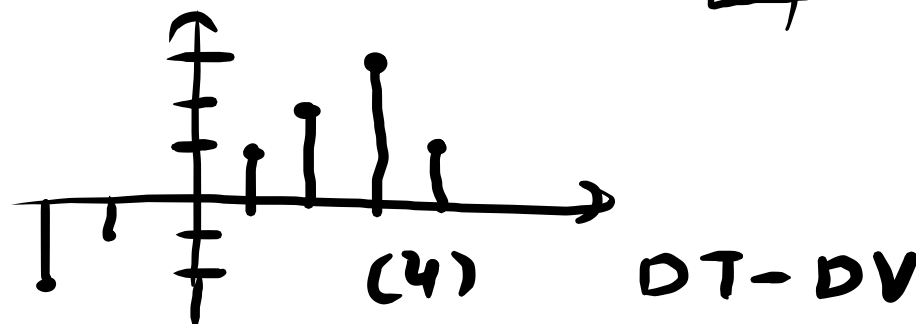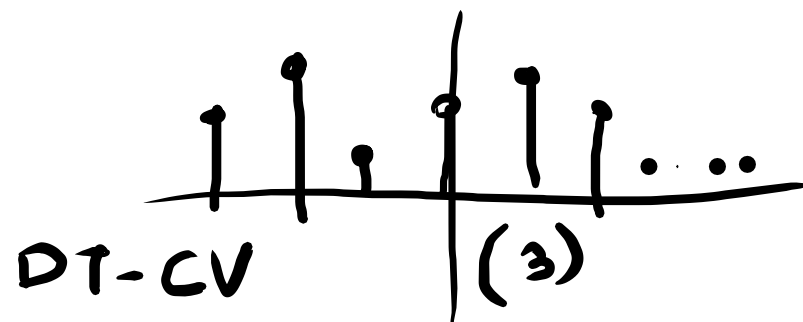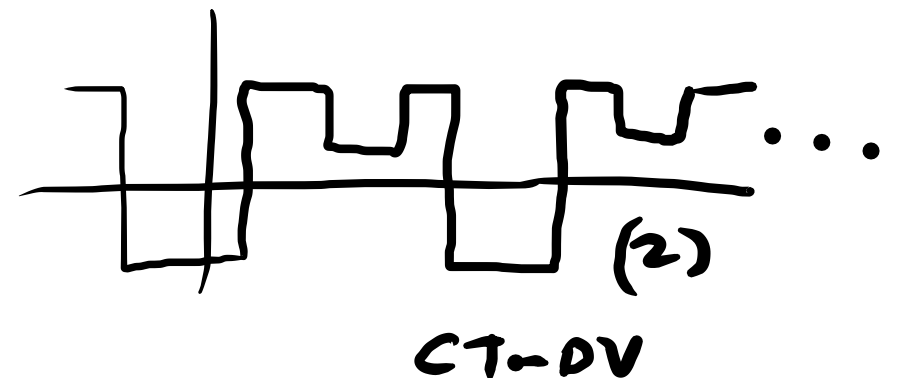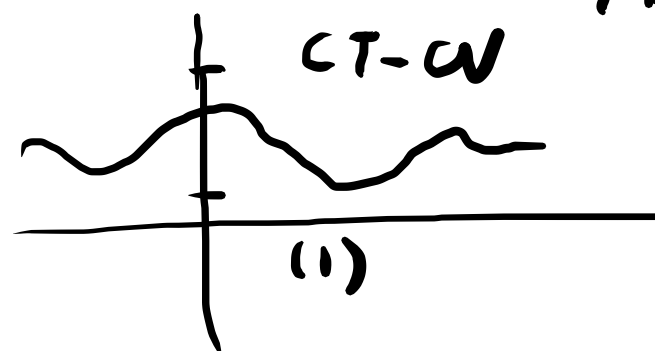will try to cover   Baseband representation
of passband signal

CT:- Continuous time
DT:- Discrete time
CV:- Conti. Value
DV:- Discrete Value

& Random processes

∝ Analog vs Digital

1G   2G — 6G —

4 Diff. categories of signal

CT-CV
(1)

CT-DV
(2)

DT-CV (3)

(4)   DT-DV

Analog signal :- (1) & (2)   Digital signal:- (4) roughly.

Meaning of the english word "Analog".   Analogue/Analogous.

Analog signal:- It is a   quite similar
(wikipedia)   Continuous time signal representing some other
        quantity. For ex, in an analog audio signal,
    the instantaneous signal voltage varies Continuously
    with the pressure of the sound wave.

1. Continuous time (CT):- defined for every value of time & they
    signals or analog   take on values in the continuous
        signals   interval [a,b], where a can be -∞ & b

can be ∞. ex, $x(t) = \cos(\pi t)$

2. Discrete-time signal :- defined only at certain "time instants which need not be equidistant" but in practice they are usually taken at equally spaced intervals for computational convenience & tractability.

ex₁- seq. of real or complex no·s.
$x(n)$ or $x(nT)$ ex₂ - $x(n) = \begin{cases} (0.8)^n, & n \geq 0 \\ 0, & \text{otherwise} \end{cases}$