**Lecture 1 – Digital Systems**

* Study of digital signal processing
* Are often binary, e.g., [0, 1]
* A number of *input* signals procedure a number of *output* signals
* Requires timing signal—a *clock*—to discretize models; to report change over time

Examples

* A combinational system with eight inputs, representing
  + Two 4-bit binary numbers, and
  + One 5-bit output, representing the sum
  + 1010 + 1010 = 10100
* A sequential system with
  + One input, x,
  + A clock, and
  + One output, z, which is 1 if the input was 1 on the last three consecutive clock cycles
* A system with:
  + Three inputs: A, B, C, and
  + One output Z is on/1 if two of the inputs are on/1.