# Digital *Disciplines:

*Discipline*: "A rigorous way or procedure of doing a task "

## Key Phrases & Thoughts:

- The *"Function"* of a SPST_NO switch would be to *Close*
- The *"Function"* of a SPST_NC switch would be to *Open*
- The *"Function"* of a Transistor may be to *conduct* a signal line *toward ground*, or
  the *"Function"* of a Transistor may be to *conduct* a signal line *toward a supply voltage*, or
  the *"Function"* of a Transistor may be to allow a signal line to be *released*.

- Think *"Function"* not *"Gate"*
- *"Only"* Gate        vs.        And Gate
- *"Any"* Gate        vs.        Or Gate
- Think *"Low"* when you see a Bubble
- "When you change *everything*, you change *nothing*"
       ( DeMorgan's Law simplified )
- *"Gate Transform"*
- *"Direct Implementation"* vs. *"Direct Expression"*
- *"Forced"* vs. *"Maybe"* Conditions

- Dynamic Signal Analysis
    - *"Enable"* vs. *"Inhibit"*
    - *"Active"* vs. *"Resting"*
    - *"Inverted Output"* vs. *"Non-Inverted"*

- Totem-Pole Considerations (Outputs)
    - *"Sink-Current"*        (Active Pull-Down)        10 ma        (10x the Source-Current)
    - *"Source-Current"*        (Active Pull-Up)        1 ma
      (Never drive LED's with the Source-Current)

- Input Thresholds   (Each "Family" has it's own specs!)
    - Voltage requirements
        - Lower-Threshold
        - Upper-Threshold
    - Current requirements
        - Lower-Threshold
        - Upper-Threshold
    - Resistance requirements
        - Lower-Threshold
        - Upper-Threshold