

# Digital Design (A)

Submitted by Nareman Tarek Allam

Instructor : Ziad Mohammed

# Program Status Word (PSW)

- First of all i will define what is PSW for 8051 micro controller and then we will discuss auxiliary flag.
- PSW is a flag register it contain status bits that refer to current CPU state.
- it is 8 bit register.
- four of them are called conditional flags : *carry flag* , *auxiliary flag* , *parity flag* and *overflow flag*.
- Two unused bits as user definable flags.



# Auxiliary Flag

- First of all i will define nibble : nibble is a group of 4 bits.
- Auxiliary flag is set when carry present but in middle of the data.
- In 8051 case it present when there is a carry from bit number D3 to bit number D4.