CPE/EE 421/521: Laboratory Assignment 4

**Purpose**: To study MSP430 and learn how to utilize the Basic Clock Module, the Watchdog Timer, the TimerA, and the UART.

**Assignment #1 (30 points): Blink the Status LED using WDT**
Write a C program that toggles the status LED on the EasyWeb2 development board with frequency of 1Hz (approx. 1s on, and 1s off). Use the high frequency crystal for MCLK (8MHz) and ACLK (1MHz), and watchdog timer in the interval-timer mode. The watchdog timer is clocked by ACLK. Change parameters to increase toggle frequency to 2Hz and to decrease it to 0.5Hz.

**Assignment #2 (30 points): Blink the Status LED using TimerA**
The same as Assignment#1, use TimerA interrupts instead of watchdog timer.

**Assignment #3 (40 points): Serial communication**
Write a C program that accepts a character from the HyperTerminal and then echoes it twice to the HyperTerminal. The main program is an infinite loop waiting for a new character (received through an interrupt service routine); after a character is received it sends its value back to the HyperTerminal twice, followed by a *new line* and a *carriage return* characters.

Note UART mode: Baud rate is 38400 bps, 8-bit characters

To set up the HyperTerminal do the following:
- Connecting using: COM1
- Bit per second: 38400
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: use Xon/Xoff