University of Notre Dame
Department of Electrical Engineering

EE 30321 **Embedded Systems** **Stevenson**

Assignment #7
Interrupts

The object of this assignment is to utilize the Interrupt functionality found in a microcontroller to handle all I/O needs. You will use the same hardware that you built in the last assignment. There should be no "killing a fixed time" type loops in your programs. All code should be written in C.

Assignment

1. Drive the LED with a PWM signal that is on for $570\mu s$ ($\pm$ $10\mu s$) and off for $430\mu s$ ($\pm$ $10\mu s$). Turn in the code and a screenshot (from either an oscilloscope or logic analyzer) of the PWM waveform.

2. Implement a on/off LED controlled by a push button, i.e. when the push button is pushed the LED is on, when not pushed it is off. Remove the external pull-up resistor attached to the switch and replace it with the internal pull-up. Turn in the program and demonstrate your program.

3. Rewrite the code for Problem 3, Assignment 6 to use interrupts instead of polling. Turn in program and demonstrate your program.