ECE455 Lab 3
Interrupt Shaping

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Please email through Learn

General Hints

- Look through this paper (also on LEARN).
- Quickly go through the manual
  - Hint: Focus on sections needed only for Lab 3.
- Reuse your code from Lab 1 and Lab 2.
- Debugging through print-out will be useful, i.e., interrupt count, inter-arrival time elapsed, etc.

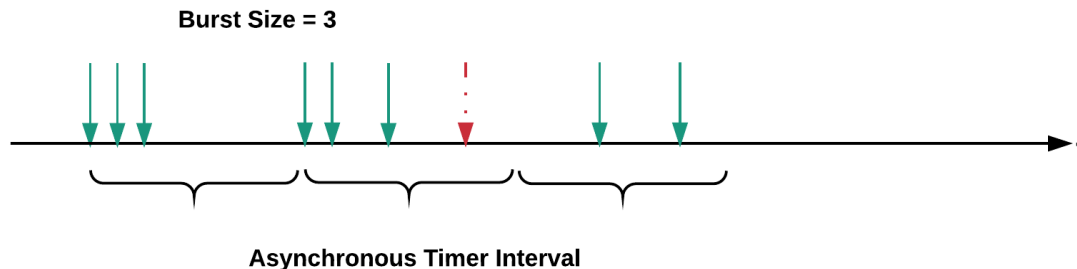# Lab 3 Requirements(1/2)

- Implement the software algorithms:
1. Strict Software Scheduler
   - ✓ Inter-Arrival time: 5 Seconds

Minimum Inter-Arrival Time
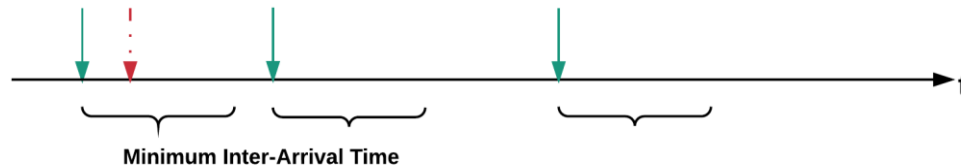
2. Bursty Software Scheduler
   - ✓ Max Burst size: 3 Interrupts
   - ✓ Max Arrival Rate: 10 Seconds

Burst Size = 3

Asynchronous Timer Interval

Lab 3 Requirements (2/2)

- Source of Interrupts: INT0 Button of Lab2
- Outputs:
  - ❖ LED-28 for processed interrupts only.
  - ❖ LCD display to show current code state
    "Handling the interrupt, Reached Burst Size .."
- Make sure the behavior is consistent:
  - Did you clear the interrupt flag ?!
  - Unexpected LED blinks ? Check Interrupt clearing APIs in the manual.
  - Burst Increments properly ? Might need to use the debounce code.
  - Keep debugging using LCD display and breakpoints.

Lab 3 Deliverables

- A zip file that have **two** KEIL uVision project folders
    - One for Strict scheduler, One for Bursty scheduler
    - Each project folder should be compiling, ready to flash on board.
    - Any resubmissions will not be accepted after deadline !
- The binary files you used to test your code. (.axf)
    - Simply don't clean your project before submission.
- Short pdf report of maximum 1 page that briefly discuss your implementation and design.
    - ✓ Please write your name and ID in the report.

Lab Deadlines

- Posted to LEARN:
  - ~~Lab 1 is due on May 20th~~
  - ~~Lab 2 is due on June 10th~~
  - Lab 3 is due on July 4th
  - Lab 4 is due on July 22nd
- E2-2363 Lab is reserved for ECE455 all Thursdays 9.30-11.30am.

TA Contact

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- Learn announcement if I will be in the lab.
- If needed, will announce office hours.