Lab 1 Assembly language, arrays, functions

* LDR(S/H/B), STR(S/H/B), EOR, AND, ORR, BIC, different branches
  + 2017 Fall: 1.d
  + 2018 Fall: 2a, 6
  + 2019 Spring: 2, 7
  + 2019 Fall: 3, 4, 9
  + 2020 Spring: 1.c, 1.d, 1.e, 7
* Left shifting and right shifting, signed and unsigned, add, sub, mul
  + 2017 Fall: 1.f
  + 2017 Fall: 2
  + 2018 Fall: 2a
  + 2019 Spring: 7
  + 2019 Fall: 3, 9
* Big Endian/Little Endian
  + 2019 Fall: 3, 4
  + 2020 Spring: 1.d
  + 2022 Fall: 7
* Friendly v. Unfriendly coding
  + 2019 Spring: 5
  + 2019 Fall: 7b
  + 2020 Spring: 5b
* RAM/ROM/Volatile/Nonvolatile
  + 2017 Fall: 1c
  + 2018 Fall: 1 where are things located?
* How many bits/bytes in a memory address on Cortex M
* Calculations with number of bits after add, subtract, multiply, divide
  + 2019 Fall: 1.b
  + 2020 Spring: 1.b
* While loop/for loop, if statements
  + 2018 Fall: 3
  + 2019 Fall: 9
* Different data types, Size of char, int, Boolean
  + 2019 Spring: 1.c, 1.e
* Overflow
  + 2019 Spring: 1.c
  + 2019 Fall: 1.c
* What happens when PUSH/POP
  + 2017 Fall: 6
  + 2018 Fall: 2
  + 2019 Spring: 6
  + 2019 Fall: 8
  + 2020 Spring: 6
  + 2022 Fall: 6
* What happens to Link Register/PC (during BL or BX LR or POP {PC})

Lab 2 Switch interface, LED interface, timing delay

* Positive v. negative logic for switches/LEDs (interface the circuit) (calculations)
  + 2017 Fall: 7
  + 2018 Fall: 4
  + 2019 Spring: 4
  + 2019 Fall: 6a, 7a
  + 2020 Spring: 4
  + 2022 Fall: 4 switch
  + 2022 Fall: 5 LED
* Properties of LEDs (non-Ohmic device), Ohm’s Law and Power
  + 2017 Fall: 1.a What is VOL
  + 2019 Spring: 1.d, 4
  + 2019 Fall: 1.a, 1.d, 2
  + 2020 Spring: 1.a
* I/O programming (no initialization, just input and output)
  + 2017 Fall: 5, both C and assembly
  + 2017 Fall: 8 (in C)
  + 2018 Fall: 3, convert assembly to C
  + 2020 Spring: 5 Input output in C
  + 2022 Fall: 4b switch input in assembly
  + 2022 Fall: 5b LED output in C
* Voltage/current/power
  + 2017 Fall: 1.b
  + 2022 Fall: 1.a 1.b
* Duty Cycle
* AAPCS
  + 2019 Spring: 1.b, 7

Lab 3 C programming, functions, arrays

* C prototypes, functions, parameters, invocation
* If then (assembly to C, C to assembly)
  + 2017 Fall: 3, understand, convert C to assembly
  + 2022 Fall: 2, understand convert C to assembly
* While-loop (assembly to C, C to assembly)
  + 2017 Fall: 4, understand, convert to assembly
  + 2018 Fall: 6, string search, both C and assembly
  + 2019 Spring: 2
  + 2020 Spring: 2, 3, 7
* Debug C
  + 2019 Spring: 1.a
* Accessing array (in both Assembly and C)
  + 2018 Fall: 5, debugging dump
  + 2019 Fall: 5 find the minimum in array
  + 2020 Spring: 2, array access
  + 2022 Fall: 3, array access in C
* Local v. global variables, data types
  + 2019 Spring: 2
  + 2019 Fall: 1.e, 1.f
  + 2022 Fall: 1.c. 1.d 1.e
* Intrusiveness of debugging methods