Birla Institute of Technology & Science, Pilani
Hyderabad Campus

CS F342 TENTATIVE LAB PLAN: 1st SEM 2019-20

Lab No.	Learning Objectives	Topics to be covered
1-2	Introduction to MIPS; Understanding System calls and arithmetic operations	Installing and launching SPIM (QTSPIM); System Calls and User Input + Add/Sub; manual Disassembly - reversing given MIPS byte code (binary) to assembly; Understanding Pseudo instructions
3	Understanding mul/div operations and FP instructions	FP operations; multiply/divide using HI/LO registers; conversion across numeric datatypes; representing characters
4	Understanding control instructions; loop constructs in MIPS	Code Labels and Jump instructions; Logical operations; shift operations; loops: sentinel control loop & counter control loop; R-I-J type instructions
5	Exploring arrays and strings with MIPS	array and string manipulation in MIPS; load/store instructions (for integers as well as floating point numbers);
6	Understanding function calls and exception handling	basics on function calls; advanced function calls and exception handling in MIPS assembly; recursive function calls
7	Representing structures	Dynamic memory allocation using sbrk syscall; structure representation in MIPS
8	Exploring sorting techniques using MIPS	Various sorting techniques: bubble sort, merge sort etc.
9	To get hands-on exposure to pipelined execution	Multi-cycle datapath and control path implementation

TENTATIVE LAB EVALUATION SCHEDULE:

SNo.	LAB TEST No.	PS1	PS2	PS3	PS4
1	Lab Test 1	Sept 12th, 2019	Sept 9th, 2019	Sept 11th, 2019	Sept 13th, 2019
2	Lab Test 2	Oct 17th, 2019	Oct 14th, 2019	Oct 16th, 2019	Oct 18th, 2019
3	Lab Test 3	Nov 7th, 2019	Nov 4th, 2019	Nov 6th, 2019	Nov 8th, 2019
4	Lab Test 4	Nov 21st, 2019	Nov 18th, 2019	Nov 20th, 2019	Nov 22nd, 2019