Tentative Schedule for Software and Hardware Co-Design with Zybo -- Week 1 (As of 8-9-2021)
Monday to Saturday, August 9-15, 2021

Day	9:00-10:50am	11:00-11:50	2:30-3:20pm Due date	3:30-4:20pm	Handouts
1 Monday (August 9) Verilog Review Zybo Introduction	○ Lecture 1 Combinational and Sequential Circuits in Verilog ○ Lab 0 Vivado installation and Gate3 implementation with Vivado ○ Lab #0 and Homework #1 assigned	○	○	○	○ Lab #0 handout ○ Lecture #0 and #1 PPT ○ Gate3 project ○ Detect011 project
2 Tuesday (August 10)	○ Lecture 2-1 Zybo, FPGA, PicoBlaze and UART Clock ○ Lecture 2-2 ASM chart and Controller Design ○ Lab #1 Xilinx Tool Flow and UART Clock	○	○ Lab #0 due		○ Lecture 2-1 and 2-2 ○ Lab #1 handout and source files ○ Homework #1handout ○ problem8homework1UART documents.zip ○ Four counters project.zip ○ stopwatch2021summerlNexyA 7.zip
3 Wednesday (August 11) I2C Master Module	○ Lecture 3-1 Design of I2C Controller in Verilog ○ Lab #2 Phase 1 I2C	○	○ Lab #1 Xilinx Tool Flow and UART Clock due	○	○ Lab2 phase 1 handout ○ Lab2 phase 1 files ○ Lecture 3-1 handout ○ Lecture 3-1 worksheet ○ TMP101 datasheet
4 Thursday (August 12) TMP101	○ Lecture 3-2 Reading TMP101 ○ Lab #2 Phase 2 TMP101	○	○ Lab 2 Phase 1 due ○ Homework #1 due	○	○ Lab2 phase 2 handout ○ Lab2 phase 2 template files ○ Lecture 3-2 ppt ○ Uarttypewriter project ○ TransmitRAM2021summer project
5 Friday (August 13) Zynq Intro	○ Lectures 4-1 and 4-2 Introduction to Zynq, IO pins and memory ○ Lab #3 part 1 and part 2 Block design and adding IP cores	○	○ Lab #2 Phase 2 TMP101 due	○	○ Lecture 4-1 and 4-2 ppt ○ lab3summer2021SoC handout ○ Lab Workbook ZYNQ Lab 1 ○ Lab Workbook ZYNQ Lab 2 ○ The Zynq Book ○ ZYBO Reference Manual, 2014
6 Saturday (August 14) AXI4, IP, SDK, XDC, Timers	○ Lecture 6 Board definition, LED ip, drivers, Timers, Debugging ○ Lab #4 part 1 and part 2 Add custom IP and write basic software ○ Homework #2 assigned		○ Lab #3 Parts 1 and 2 Block design and adding IP due		○ Lab 4 part 1 and part 2 handouts ○ Lecture 5-1 and 5-2 ppt ○ Homework 2 handout

Schedule for Software and Hardware Co-Design with Zybo -- Week 2
Monday to Saturday, August 16-22, 2021

Day	9:00-10:50am	10:30-11:30	2:30-3:20pm Due date	3:30-4:20pm	Handouts of the day
7 Monday (August 16) Interrupt I2C Modules	○ Lecture 6 Board definition, LED ip, drivers, Timers, Debugging ○ Lab #5 Software and Timer ○ Lab #6 Ping Pong Game on Zybo with Polling	○	○ Lab #4 Add custom IP and write basic software due ○	○	○ Lab 5 handouts ○ Lecture 6 ppt ○ Lab 6 handout
7 Tuesday (August 17) UART IP DMA, VGA	○ Lecture 7 LED Ping-Pong Game with Polling, sdk, XDC ○ Lecture 8 Interrupts and interrupt-driven pingpong game ○ Lab #7 Interrupt-driven Ping-Pong on Zybo	○	○ Lab #5 Software and Timer due	○	○ Lecture 7 ppt ○ Lecture 8 ppt ○ Lab 7 handout
8 Wednesday (August 18) VGA, Color generation Bootloader	○ Lecture 9 ARM I2C Module and Driver, UART ip Lab #8 I2C and UART with ARM modules	○	○ Lab #6 Ping Pong Game on Zybo with Polling due	○	○ Lab 8 I2C handout ○ Lecture 9 ○ xiicps_polled_master_example.c
9 Thursday (August 19) Embedded Linux	○ Lecture 10 VGA and RBG color generation ○ Lab #9 VGA, Image Creation and Boot Loader on Zybo	○	○ Lab #7 Interrupt-driven Ping-Pong on Zybo due ○ Homework #2 due	○	○
10 Friday (August 20) ARM Cortex A9 Lab #11	○ Lecture 11 Embedded Linux with Zybo and ARM Cortex A9 Architecture ○ Lab #10 Embedded Linux with Zybo	○	○ Lab #8 2C and UART with ARM modules due	○	
11 Saturday (August 21)	○ Lecture 12 Device Tree, Ubuntu and Linux Basics, software and hardware co-design	○	Lab #9 VGA, Image Creation and Boot Loader on Zybo	○	○
11 Saturday (August 22)	○	○	Lab #10 Embedded Linux with Zybo	○	○