Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science

6.111 - Introductory Digital Systems Laboratory

Project Resources

Project resources are allocated on a per student basis. This means that a two-person project has twice the resources that an individual project has, etc. You have already been issued a kit and a quantity of ICs. The following items are available on an individual sign-out basis. Note that the quantities listed must suffice for the entire class.

Quantity	Item
200	Proto-boards which do not have switches, lights, or power supplies. Suitable 5 volt power supplies are mounted on the lab benches. Each proto-board will hold about one-half the number of ICs that can be mounted on your kit.
100	50 pin 3M ribbon cables for kit to kit connections

The following items may have to be shared. Cables for the TVs must be signed out and returned daily.

14	Monochrome TV Monitors with BNC cable
15	Color TV Monitors with cable
15	Speakers (with built in amplifier)
8	Microphones
2	Television Cameras with sync inputs
6	Stepper Motors

The following items may be signed out from the instrument room. Data sheets are available from the instrument room.

30	AD775	Flash A to D Converter
50	LM386	Low Power Audio Amplifier
50		10 Mhz Crystal Oscillator
30	MC6847	Video Display Generator
30		3.575945 MHz Crystal
50		2K Pot
15	AY 1015D	UART
50		LED Assembly
150		HEX LED
6	AM25S557	High Speed 8 x 8 Multiplier

14	AM25S558	High Speed 8 x 8 Multiplier
30	AM29C509DC	High Speed 12 x 12 Multiplier Accumulator
1	6850	Asynchronous Communications Interface Adapter
30	6N138	Opto-isolater plus 1N914 diode
10		5-pin DIN cables (female cable to wires)
small	Misc.	Crystal Oscillator
10	28F256A	FLASH Memory
15	Am28F010	131,072 x 8-Bit CMOS Flash Memory
20	Am28F020	262,144 x 8-Bit CMOS Flash Memory
20	Am28F512	65,536 x 8-Bit CMOS Flash Memory
26	6116-3	2K by 8 SRAM
8	6264-15	8K by 8 SRAM
26	62256-12	32K by 8 SRAM
20	22V10 PAL	
20	16V8 PAL	
75	20V8 PAL	
25	MAXIM 233	RS 232 level converter
11	Am29C517APC	16 bit multiplier
25	54ACT/74ACT715	Programmable Video Sync Generator
6	GS4981	Monolithic Video Sync Separator
4	CD22204	Harris 5V Low Power Subscriber DTMF Receiver
30	AD8402/3	Dual/Quad Digital Pot
in kit	CY7C374i	CPLD
in kit	FLEX10K	Altera gate array board
10	P9931	small speaker/microphone

The following items are in cabinets in the digital lab. Please let the staff know if the stock of parts is low. Please send an email to 6.111staff@mit.edu. Data sheets are available from the instrument room.

50	741	Op Amp
25	LF357	Op Amp
25	LM311	Comparator
50	AM26LS32	Line Receiver (Comparator)
25	AD558JN	D to A Converter
50	AD670JN	A to D Converter
50	898-1-R5.1K	(or 898-1-R4.7K) resistor pack
small		misc. resistors and capacitors- in another cabinet
100	74LS00	Quad 2-input NAND gate
75	74LS02	Quad 2-input NOR gate
75	74LS03	Quad 2-input NOR open collector gate
160	74LS04	Hex inverter
100	74LS08	Quad 2-input AND gate
120	74LS10	Triple 3-input NAND gate

50	74LS14	Hex Schmitt Trigger INVERTER
50	74LS20	Dual 4-input AND gate
50	74LS30	8-input NAND gate
50	74LS32	quad 2-input OR gate
50	74LS37	quad 2-input NAND buffer
50	74S38	quad 2-input NAND open collector gate
25	74LS42	BCD to Decimal decoder
100	74LS47	BCD to 7-segment decoder driver
150	74LS74	dual D flip flop
150	74LS85	4-bit comparator
50	74LS86	quad 2-input XOR gate
50	74LS107	dual JK flip flop with clear
50	74LS112	dual JK flip flop with preset and clear
50	74LS123	dual retriggerable monostable
75	74LS126	quad tri-state non-inverting buffer
50	74LS133	13-input NAND gate
75	74LS138	3 to 8 decoder
75	74LS139	dual 2 to 4 decoder
50	74150	16 to 1 multiplexor
150	74LS151	8 to 1 multiplexor
100	74LS153	dual 4 to 1 multiplexor
150	74LS157	quad 2 to 1 multiplexor
300	74LS161	binary 4-bit counter with direct clear
500	74LS163	binary 4-bit counter with synchronous clear
100	74LS169	4-bit up/down counter
100	74LS175	quad D edge triggered FF with clear, Q, /Q
50	74LS181	4-bit ALU
25	74LS193	binary dual clock up/down counter with clear
100	74LS194	4-bit bidirectional shift register
300	74LS244	Octal tri-state non-inverting buffer
100	74LS245	Octal tri-state bidirectional bus buffer
200	74LS257	quad 2 to 1 tri-state multiplexor
100	74LS259	8-bit addressable latch (positive output decoder)
150	74LS273	Octal D edge triggered flip flop with clear
100	74LS283	4-bit adder
100	74LS367	Hex tri-state non-inverting buffer
100	74LS368	Hex tri-state inverting buffer
75	74LS373	Octal D tri-state latch
100	74LS374	Octal D edge triggered tri-state flip flop
200	74LS377	Octal D edge triggered flip flop with enable
100	74LS393	dual 4-bit binary counter
100	74LS399	quad 2-input multiplexors with storage
25	74LS670	4 by 4 register file
60	1408	DAC