

**Laboratory Name:** System on Chip Laboratory  
**Laboratory In-Charge:** Dr. G. Dhanabalan

**Venue:** 1612  
**Qualification:** M.E., Ph.D.,

### TECHNICAL MANPOWER

**Laboratory Assistant:** Mrs. S. Amsa valli  
**Qualification** : Diploma in CSE

### DESCRIPTION ABOUT THE LAB

System on Chip laboratory is basically intended for the realization of any problem into an FPGA chip. It is equipped with Xilinx software, FPGA chips (ARTIX 7, ZYBO Boards, ZYNQ boards) and the interfacing boards like temperature monitoring, camera. This facilitates the undergraduate students to carry over the experiments to meet the syllabus requirements. Students can also do their major projects using these facilities. Since the laboratory is equipped with latest FPGA chips, research scholars also utilize this laboratory.

### OBJECTIVES

- To build reconfigurable system using HDL and FPGAs.
- To perform partial reconfiguration for various applications using peripheral devices.
- To demonstrate an embedded system on FPGA using IP blocks.
- To explain the functionality of ARM and PSoC architectures.
- To demonstrate the programmable system on Chip interfacing with Peripheral devices.

### LIST OF MAJOR EQUIPMENT

HARDWARE			
S.No	Equipment Name	Quantity	Cost (Rs.)
1	XILINX ZYBO-Zynq Board	6	1,29,772
2	Basys 3 Artix-7 FPGA Board	20	2,28,620
3	Nexys Video ARTIX 7 FPGA	2	87,320
4	CY8KCKIT - 001C	4	92,040
5	PYNQ	10	2,06,028
6	Intel Core i5 processor PCs	77	20,37,227
SOFTWARE			
S.No	Software Name	Price (Rs.)	
1	XILINX VIVADO	5,16,234	
<b>Total Cost</b>			<b>47,42,694 /-</b>

### LABORATORY SPACE AND STUDENT

**Area of the Laboratory** : 160 sq.m  
**No. of students per session** : 30  
**Batch Size** : 1 student / System  
**Weekly Utilization Status** : 32 hours / week

### COST OF THE LABORATORY

**Total cost of equipment/software** : Rs. 47,42,694 /-

### ADDITIONAL FACILITY

Equipment Name	Date of Purchase	Cost (Rs.)
PYNQ	20.09.2022	1,83,330
CY8CKIT-001C Development Boards & Kits-Arm PSoC	30.02.2018	69,030
CY8CKIT-025-PsoC	30.02.2018	8,850
NEXYS 4 Video	30.12.2017	87320
ZYBO Board	30.12.2017	20,060
PMOD	30.12.2017	20,414

### NEXYS VIDEO ARTIX 7 Board



### PYNQ, ZYBO, BASYS 3 Boards

