Computer Organization
Lab Code: PCC-CS392
Contacts: 4P

Name of the Course:	**Computer Organization Lab**
Course Code: PCC-CS392	Semester: III
Duration:6 months	Maximum Marks: 100
Teaching Scheme:	
Theory: hrs./week	Continuous Internal Assessment
Tutorial: NIL	External Assesement: 60
Practical: 4 hrs./week	Distribution of marks: 40
Credit Points:	2
Course Outcomes:	
1	PCC-CS302.1
2	PCC-CS302.2
3	PCC-CS302.3
4	PCC-CS302.4
Pre-Requisite:	
Pre-requisites as in PCC-CS302	

Laboratory Experiments:	
1	Familiarity with IC-chips: a) Multiplexer, b) Decoder, c) Encoder b) Comparator Truth Table verification and clarification from Data-book.
2	Design an Adder/Subtractor composite unit.
3	Design a BCD adder.
4	Design of a 'Carry-Look-Ahead' Adder circuit.
5	Use a multiplexer unit to design a composite ALU
6	Use ALU chip for multibit arithmetic operation
7	Implement read write operation using RAM IC
8	8. (a) & (b) Cascade two RAM ICs for vertical and horizontal expansion.

Any experiment specially designed by the college
(Detailed instructions for Laboratory Manual to be followed for further guidance)

B. P. Poddar Institute of Management & Technology

Department of Electronics & Communication Engineering

(B Block)

List of Experimental Setup for AICTE Portal
AY: 2021-22

S. No.	Name of the Laboratory	List of Experimental Setup
1.	Digital System Design Lab	Trainer kit, IC tester, logic scope, MyCAD Pro 2009, VHDL PROGRAMMING-ISE 10.1i (XILINX) (10)
2.	Analog Communication Lab	Digital frequency counter, DSB/SSB/AM trainer kit, DSB-SC kit, SSB-SC kit, DSB-SSB mod-demod trainer kit, FM communication kit, VCO-PLL kit, super heterodyne Rx kit, selectivity, sensitivity & fidelity measurement kit, noise audio amplifier (SNR) kit, noise power spectral density kit, PC, B/W T.V picture tube, B/W T.V trainer kit, B/W T.V pattern generator, radio receiver trainer kit
3.	Analog Electronic Circuits Lab	Trainer kit (bread board with variable power supply), trainer kit (bread board with variable power supply and volt meter, current meter)
4.	Microprocessor and Microcontroller Lab	ESA-85, 8085 trainer kit, 8085 simulator, 8255 PPI , LED display interfacing unit, XPO-8051 trainer kit, XPO-51 DAC and ADC, PCs
5.	Electromagnetic Wave Lab	Gunn microwave test bench, klystron microwave test bench, setup for measuring VHF antenna radiation pattern, TDR and FDR setup, Scitech transmitter and receiver
6.	Digital Communication Lab	PAM-PPM-PWM modulation & demodulation trainer kit (ST 2110), TDM-PCM transmitter trainer kit, TDM-PCM receiver trainer kit, carrier modulation, demodulation and data reforming Rx trainer kit, DM-ADM kit (ADTK-001-002), carrier modulation Tx trainer kit/DFCMTT-01-03, carrier demodulation and data reforming Rx trainer kit./ TP RTK-01-03, QPSK,OQPSK,DQPSK modulation & demodulation trainer kit
7.	Digital Signal Processing Lab, Control System and Instrumentation Lab, VLSI Design Lab	TMS320V C5416 DSP Trainer Kit (5 NOS), MATLAB 6.5 (5 USER), MATLAB 9.5 (3 USER), 20 PCs, MyCAD Pro 2009(10 users)-working, Mentor Graphics IC Nanometer Design Bundle Software (15 users), VHDL PROGRAMMING-ISE 10.1i (XILINX) (10)
S. No.	**Name of the Laboratory**	**List of Experimental Setup**

8.	Programming for Problem Solving Lab, Data Structure Lab, Numerical Methods Lab, Computer Network Lab	Desktop Computer (Intel Core i5-8500 3 GHz CPU, 1 TB 7200 RPM SATA 6G 3.5 HDD, 8 GB DDR4 RAM, 19" LED Monitor)- 36 Nos., S/W configuration OS - LINUX and C programs GCC Compiler, NIC card, CAT5 cables, LAN connector, LAN card, network switch
9.	Electronic Device Lab, Mini Project/Electronic Design Workshop	Trainer kit (bread board with variable power supply), PCs
10.	Project Lab	Regulated power supply, Breadboard trainer kit, Data acquisition system, Arbitrary function generator, Ssmart Phone, PCs
11.	Embedded System and IoT Lab (Research Lab)	MSP 430 EXP G2 Launch Pad, CC110L Booster Pack, MSP 430F5529LP, Educational Booster Pack MKII, TIVA Launch Pad EK-TM4C123GXL, Sensor Hub Booster Pack for Tiva™ C, Simple Link Wi-FiCC3100 Booster Pack, Simple Link Wi-Fi Module, Groove Starter Kit, RSLK – Robotic System Lab Kit Basic, Raspberry Pi 3B 1GB RAM, PCs

Sl. No.	Name of the Laboratory	List Of Experimental Setup In Each Laboratory/Workshop
I	Basic Electrical Engineering Lab	Hardware based Experimental Set-up 1. Calibration of Ammeter & Watt meter 2. R-L-C Series Circuit 3. R-L-C Parallel Circuit 4. Open circuit & short circuit test of 1-phase transformer 5. Characteristics of fluorescent lamp 6. Characteristics of Tungsten & Carbon lamp 7. Verification of Thevenin's theorem 8. Verification of Norton's theorem 9. Verification of Maximum Power Transfer theorem 10. Verification of Superposition theorem 11. Starting and reversing of DC shunt motor. 12. Speed control of d.c. shunt motor 13. Network Theorem verification Trainer (Model NW-1) 14. Network Theorem verification Trainer (Model NW-2) Software based Experimental Set-up 1. Transient analysis of series RL circuit using SCILAB software. 2. Transient analysis of series RC circuit using SCILAB software.
II	Electric Circuit Theory Lab	Hardware Expt.set up 1. Verification of Norton's Theorem. 2. Verification of Thevenine theorem 3. Verification of Super position Theorem 4. Low Pass filter 5. High Pass filter 6. R-L-C Series Resonance 7. Two port network (Z & Y parameters) Software set up 1. SCILAB(open source software)
III	Power System Lab	1. Simulated power transmission line 2. Directional overcurrent relay 3. Overcurrent and earth fault relay 4. Differential relay 5. Under voltage relay and under voltage relay trainer kit 6. Oil insulation test set 7. Transmission line trainer kit 8. Transmission line simulator 9. Transmission line training system (nvis-7063) 10. HV insulation breakdown test set 11. Ac high voltage tester model-hj-5-10 12. Under voltage and over voltage relay testing system (nvis-7093) 13. Mi power software

IV	Power Electronics & Electric Drives Lab.	1. Power electronics trainer Kit 2. Ac phase control circuit 3. SCR characteristics kit 4. Triac characteristics kit 5. Parallel inverter trainer 6. Cyclo converter trainer 7. Different triggering circuits kit 8. Thyristor control dc drive. 9. Chopper fed dc drive. 10. Single phase ac motor speed control using triac. 11. V/f control 3 phase squirel cage lnduction motor. 12. 4- Quadrant Drive simulator – DC motor Speed control Trainer Kit
V	Control System Lab.	1. Linear System Simulator. 2. DC Position Control Servo 3. Linear System Simulator 4. Stepper Motor 5. PID Controller 6. Digital Control System 7. Light Intensity Control 8. Compensation Design 9. Control System Relay 10. Universal Electronics Trainer Kit
VI	Electrical Machine Lab	1. D.c shunt motor-d.c shunt generator set with control panel 2. D.c series motor-d.c shunt generator set with drum controller, panel box & load box 3. D.c compound motor –alternator set with panel box and load box 4. D.c. shunt motor- alternator set with control panel 5. 3 phase squirrel cage induction motor- dc shunt generator set 6. D.c. compound generator- d.c. shunt motor with control panel 7. 3 phase induction motor set up with belt load & control panel 8. 3 phase slip ring induction motor- dc generator set 9. Single phase induction motor with control panel 10. 1 ϕ transformer with panel 11. 3 ϕ transformer with panel
VII	Electrical & Electronic Measurement Lab	1.Familiarization with different parts of Electrical Measuring Instruments 2. Measurement of 1-ϕ Power by C.T& P.T trainer kit 3. Measurement of 3-ϕ power in a Polyphase circuit by Two-wattmeter method

		4. Calibration of 1-ϕ Energy meter 5. Measurement of Low resistance by Kelvin's Double Bridge trainer kit 6. Measurement of Capacitance by Desauty Bridge trainer kit 7. Measurement of Capacitance and power factor by Schering Bridge trainer kit 8. Measurement of Self Inductance by Anderson's Bridge trainer kit 9. Measurement of Inductance by Maxwell's Bridge Trainer kit 10. Measurement of Frequency by Wien's Bridge trainer kit 11. Static Characteristics Trainer Kit 12. DMM trainer kit 13. A/D Converter trainer kit 14. D/A Converter trainer kit
VIII	Project Lab	1. Dual Trace Oscilloscope. 2. Function Generator 3. DC Power Supply 4. PID Controller 5. Different electronic & electrical components and kits
IX	Electrical System Design Lab	Cut sections of motors and generators, Windings, Computer
X	Electrical Simulation & Research Lab	37 Computers 1. CASPOC Software 2. MATLAB Software 3. PSPICE Software 4. SCILAB

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B. P. Poddar Institute of Management & Technology
Department of Information and Technology

Semester	Subject Code	Subject Name	Laboratory Name
ODD	PCC-CS391	Data Structure & Algorithm Lab	Lab VIII(C201)
	PCC-CS392	Computer Organization Lab	CO Lab((C Block 4th floor)
	PCC-CS393	IT Workshop(Python)	Lab IX(C205)
	ECS 591	Software Engineering Lab	Lab IX(C205)
	PCC-CS592	Operating System lab	Lab VIII(C201)
	PCC-CS593	Object Oriented Programming Lab	Lab IX(C205)
	IT791	Internet technoology	Lab IX(C205)/ Lab VIII(C201)
	IT792	Multimedia	Lab IX(C205)
	IT793A	E-Commerce	Lab VIII(C201)
	IT795	Project	Project lab(C204)
Even	ES CS 291	Programming (C) for problem Solving	Lab VIII(C201)
	PCC-CS492	Computer Architecture	Lab IX(C205)
	PCC-CS494	Design & Analysis and Algoritham lab	Lab VIII(C201)
	PCC-CS691	Data Base management System Lab	Lab IX(C205)
	PCC-CS692	Computer Network lab	Lab VIII(C201)
	IT 891	Design lab	Lab IX(C205)
		Project	Project lab(C204)

B. P. Poddar Institute of Management & Technology
Department of Information and Technology

Semester	Lab Name					
	Lab IX(C205)		Lab VIII(C201)		Project Lab(C204)	
	Subject Code	Subject name	Subject Code	Subject name	Subject Code	Subject name
ODD	PCC-CS393	IT Workshop(Python)	PCC-CS391	Data Structure & Algorithm Lab	IT795	Project
	ECS 591	Software Engineering Lab	PCC-CS592	Operating System lab		
	PCC-CS593	Object Oriented Programming Lab(java)				
	IT791	Internet technoology	IT791	Internet technoology		
	IT792	Multimedia	IT793A	E-Commerce		
	PCC-CS392 (Computer Organization lab) held in CO LAB(C block 4th floor)					
	Lab IX(C205)		Lab VIII(C201)		Project Lab(C204)	
	Subject Code	Subject name	Subject Code	Subject name	Subject Code	Subject name
EVEN			ES CS 291	Programming (C) for problem Solving		Project
	PCC-CS492	Computer Architecture	PCC-CS494	Design & Analysis and Algoritham lab		
	PCC-CS691	Data Base management System Lab	PCC-CS692	Computer Network lab		
	IT 891	Design lab				

Experimental Set-up

Subject	Experiments
MCA-193 (Programming Lab C)	Experimental programs in C prime, factorial, loops, patterns, functions, arrays, structure, union etc.
MCA-293 (Data Structure Lab)	Experimental programs related to Arrays, Linked List, Stack, Queue, Trees etc.
MCA-295 (Object-Oriented Programming lab (C++))	Experimental programs using Objects, Methods with concepts like Overloading, Polymorphism, Inheritance etc.
MCA-294 (Database Lab)	Experimental programs using SQL and PL/SQL
MCA-392 (Unix lab)	Experimental programs in Shell Commands and Shell Scripts
MM -391(Statistics and Numerical Analysis lab)	Experimental programs in numerical analysis
MCA-491(Software Project Management lab)	Experimental programs in S/W Designs (ERD, DFD, Argo UML)
MCA-492 (Graphics & Multimedia Lab)	Experimental programs in graphical shapes, 2-dimensional, 3-dimensional representations
MCA-493(Advanced Database lab)	Experimental programs using PL/SQL
MCA-E503B (Object Oriented Programming With Java)	Experimental programs using Objects, Class, Methods with concepts like Overloading, Polymorphism, Inheritance etc.