University of Mumbai			
CLASS: T.E. (Electronics Engineering)		**Semester - V**	
SUBJECT: Electronics Workshop-II			
Periods per week (each of 60 min.)	Lecture		
	Practical	04	
	Tutorial	-	
		Hours	Marks
Evaluation System	Theory Examination		
	Practical examination		
	Oral Examination	-	50
	Term Work	-	
	Total		**50**

Objective	This syllabus is designed to encourage students to design and implement innovative ideas. The syllabus will give them in depth practical knowledge from design to the final verification stage. Documentation of any project is an important part of the project and students are expected to document their work properly in standard IEEE format.
	Every group of students should select different projects. Number of students should not be less than TWO and not more than THREE in one group.
1	**Computer Architecture** Demonstration of various parts of PC, Installation, Network Configuration and Troubleshooting of PC
2	**Microcontroller/Microprocessor Based Project** Students are expected to design any* microcontroller/microprocessor based system/application. PCB design, simulation and physical verification of the project should be carried out. Documentation of the project is to be done in standard IEEE format using Latex/WinTex. Project report should include abstract in maximum 100 words, keywords, introduction, design, simulation, implementation, results, conclusion and references.

3	**VHDL Based Project** Students are expected to design any* VHDL based application. Simulation, synthesis and implementation on FPGA/CPLD should to be carried out. Documentation of the project is to be done in standard IEEE format using Latex/WinTex. Project report should include abstract in maximum 100 words, keywords, introduction, design, simulation, implementation, results, conclusion and references.
*	*** To be approved by the subject in-charge**

Oral Exam include —Project report +Presentation (PPT)

References:-

1. Govindarajalu B., “IBM Pc and clones: Hardware, Troubleshooting and Maintenance”, Tata McGraw Hill.
2. Gilster Ron, ‘PC Hardware: A Beginner’s Guide”, Tata McGraw Hill
3. Minasi Mark, “PC Upgrade and Maintenance Guide”, BPB Pub.
4. Hallberg Bruce A., “Networking a Beginners Guide”, Tata McGraw Hill
5. Ingram, Peter, “Networking in easy Steps”, Dreamtech Press
6. Bigelow Stephen, “Troubleshooting, Maintenance and Reparing PC’s”, Tata McGraw Hill
7. Brown Stephen and Vranesic Zvonko, “Fundamentals of digital logic with VHDL design”, Tata McGraw Hill
8. Perry Douglas, “VHDL Programming by Example”, Tata McGraw Hill
9. Bhasker J. “VHDL Primer”, Pearson Edu.
10. VHDL Reference Manual
11. Reference Manuals for Selected Microcontrollers/Microprocessors