

VSC

	SEMESTER-IV Physics (Vocational Skill Course) - 2 credits (60 Hours)
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	Physics (Vocational Skill Course) Course code: USPHVSC2 Title: - Computer Maintenance
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Practical Course

This course is designed for learners to get exposure with various aspects of Computer and its hardware, their usage through practical and hands-on mode.

Passing standards for practical:

Total Credit: 02 (60 Hours)

Total Marks: 50

- **40% Internal Continuous assessment: 20 Marks**
- **60% External Semester End Examination: 30 marks**

Note: Individual Passing In Internal and External Examination

Instructions:

- All the measurements and readings should be written with proper units in SI system only.
- After completing all the required number of experiments in the semester and recording them in journal, student will have to get their journal certified and produce the certified journal at the time of practical examination.
- While evaluating practical, weightage should be given to circuit/block diagram, observations, tabular representation, experimental skills and procedure, graph, calculation and result.
- Skill of doing the experiment and understanding physics concepts should be more important than the accuracy of final result

Learning Outcomes:

On successful completion of this course students will be able to:

1. Understand of the different parts of the computer and its application.
2. Equip students with the knowledge of different processors. sockets, and ports, Memory (RAM & ROM).
3. Understand the fundamentals of HDD, SSD and Partitioning and Formatting
4. Understand Cooling solutions, different Input & Output Devices, printers.

5. Understand Networking Hardware Modems, Configuring Routers, switches, crimping LAN, Drive/file sharing and printer sharing.
6. Understand Installation of Virtual Machine and Basics commands of linux.
7. Troubleshoot the hardware of computers and diagnostics faults in the computer.

Internal ContinuousUSPHVSC2 practical Evaluation pattern for 20 Marks

Sr. No.	Activity	Total 20 Marks
1	Assignment or Test on practical skill experiment (Any one experiment)	10 Marks
2	viva -voce	05 Marks
3	Overall performance	05 Marks

- Semester end Practical Examination Evaluation pattern for USPHVSC2 (30 Marks)
- Duration of the practical examination: 2 Hours

Sr.No.	Activity	Total 30 Marks
1	One experiment	20 Marks
2	Certified Journal	05 Marks
3	Viva-Voce	05 Marks

Semester end Examination (30 Marks)

- For practical examinations, the learner will be examined in one experiment.
- Experiment will be of two hours' duration.
- A Minimum TEN experiment must perform and reported in journal.
- Evaluation in viva voce will be based on regular experiments.
- A learner will be allowed to appear for the semester end practical examination only if he/she submits a certified journal of Physics with a certificate that the learner has completed the practical course of Physics Semester IV as per the minimum requirements.

LIST OF EXPERIMENTS:

1. Demonstration of Computer (open computer), computer hardware, Overview of Computer components.
2. Demonstration of Internal Components of a Computer, Central Processing Unit (CPU) Functions, types, and performance factors (comparison of different processors), Motherboard
3. Explain and demonstrate sockets, and ports, Memory (RAM & ROM), Types, speeds, and capacities
4. Explain and demonstrate Storage Devices & Technologies, Hard Disk Drives (HDD) & Solid-State Drives (SSD), Partitioning and Formatting
5. Explain and Demonstrate Cooling solutions: Air cooling vs. Liquid cooling Heatsinks, Thermal paste, and fan management
6. Input & Output Devices, Keyboards, mice, scanners, webcams, Monitors, projectors, and display technologies (connections and working)
7. Printers (Inkjet, Laser, 3D printing), Audio devices and peripherals
8. Networking Hardware Modems, Network Interface Cards (NIC) and Ethernet cables, Wireless adapters and Bluetooth devices
9. Configuring Routers
10. Configuring Switches (Manageable and Unmanageable)
11. Colour code for crimping LAN (Cat 5/6/7) cable, Crimping LAN Cable
12. Implementation of Drive/file sharing and printer sharing.
13. Installation of Virtual Machine (e. VM Workstation, Oracle Virtual Box)
14. Installation of Operating System (RHEL/Windows) on Virtual Machine
15. Basics commands of linux (ls, cat, touch, chmod, ifconfig etc.)

References:

1. PC Organization by S. Chowdhury, Dhanpat Rai & Sons, Delhi
2. IBM PC Colons by Govinda Rajalu, Tata McGraw Hill Education Pvt Ltd, New Delhi
3. Text Book by Mark Minasi
4. Red Hat Enterprise Linux by Terry Colling

Additional References:

5. Computers by P. Norton
6. Troubleshooting and maintenance of Computers by S.P.S. Saini Vayu Education of India, New Delhi
7. Build a Computer from Scratch Author/s: Jeff Heaton, Publisher: Heaton Research, Inc., 2006

Letter Grades and Grade Points:

Semester GPA/ Programme CGPA Semester/ Programme	% of Marks	Alpha-Sign/ Letter Grade Result	Grading Point
9.00 - 10.00	90.0 - 100	O (Outstanding)	10
8.00 - < 9.00	80.0 - < 90.0	A+ (Excellent)	9
7.00 - < 8.00	70.0 - < 80.0	A (Very Good)	8
6.00 - < 7.00	60.0 - < 70.0	B+ (Good)	7
5.50 - < 6.00	55.0 - < 60.0	B (Above Average)	6
5.00 - < 5.50	50.0 - < 55.0	C (Average)	5
4.00 - < 5.00	40.0 - < 50.0	P (Pass)	4
Below 4.00	Below 40.0	F (Fail)	0
Ab (Absent)	-	Ab (Absent)	0

Sd/-

**Sign of the BOS Chairman
Dr. T.N. Ghorude
Board of Studies in
Physics**

Sd/-

**Sign of the
Offg. Associate Dean
Dr. Madhav R. Rajwade
Faculty of Science &
Technology**

Sd/-

**Sign of the
Offg. Dean
Prof. Shivram S. Garje
Faculty of Science &
Technology**