

Academic Year: 2026-27

Date: 03/08/2026

Institute Name & Code: K. K. Wagh Polytechnic, Nashik-3 (0078)

Programme: Artificial Intelligence & Machine Learning

Course Code: WPC-311002

Course Name: ENGINEERING WORKSHOP PRACTICE

Name of Faculty: Mrs R.P. Shinde / Mrs. P. A. Kadam

Class: FYAN Neural

Semester: Ist

Scheme: K

● **Course Objectives:**

Students will be able to:

1. Identify and use different tools and equipment used in maintenance of computers.
2. Understand working and use of different electronic components
3. Identify different components used on the motherboard of computer and I/O devices.
4. Do basic level maintenance of the computer
5. Understand the basics of networking.

● **Course Outcomes:**

On completing this course student will be able to

CO105.1 - Carry-out elementary level maintenance of a PC.

CO105.2 - Create partitions and format hard disk drive.

CO105.3 - Install and configure Operating system.

CO105.4 - Configure different types of peripheral devices.

CO105.5 - Setup Small Local Area Network.

CO105.6 - Use diagnostic software for fault finding in Computer system.

● **Teaching and Examination Scheme:**

Course Code	Course Title	Abbr	Course Category/s	Learning Scheme					Credits	Assessment Scheme											
				Actual Contact Hrs./Week			SLH	NLH		Paper Duration	Theory				Based on LL & TL				Based on SL		Total Marks
															Practical						
				CL	TL	LL					FA- TH	SA- TH	Total	FA-PR		SA-PR		SLA			
							Max	Min						Max	Min	Max	Min	Max	Min		
311002	ENGINEERING WORKSHOP PRACTICE (COMPUTER GROUP)	WPC	SEC	-	-	4	-	4	2	-	-	-	-	-	50	20	50@	20	-	-	100

● **Laboratory Learning Outcome (LLO):**

LLO 1.1 Identify desktop/laptop by its type and verify its specifications

LLO 1.2 Identify type of server and verify its Specification

LLO 2.1 Open PC Panel and Identify Components

LLO 2.2 Clean inside PC - Boards and Slots

LLO 3.1 Undertake Preventive Maintenance of PC using vacuum cleaner and simple tools

LLO 4.1 Connect/disconnect power socket and controller socket to disk drives and motherboard.

LLO 5.1 Configure different BIOS settings in computer system

LLO 6.1 Partition and manage hard disk

LLO 6.2 Format hard drives with different file systems.

LLO 7.1 Install Operating System – Windows family (such as Windows 10, 11)

LLO 8.1 Install Operating System –Unix family (such as Linux/Ubuntu/Centos)

LLO 10.1 Install local printer by applying various types of configuration settings

LLO 10.2 Remove and mount cartridge, troubleshoot paper jam

LLO 11.1 Share the printer, devices, folders on a network

LLO 12.1 Install and configure scanner

LLO 13.1 Set and configure monitor/display, Speaker, Microphone and LCD Projector

LLO 15.1 Connect/disconnect LAN Cable, External Hard disk, Modem, LCD/DLP Projector

LLO 16.1 Connect Modem, Hub/Switches/routers and verify the connection

LLO 17.1 Check different types of fiber optic cable's construction and connectivity

LLO 19.1 Configure devices to setup Wi-Fi environment

LLO 20.1 Create a small wired network environment

LLO 21.1 Set and configure blue tooth based wireless mouse, keyboard and other devices

LLO 23.1 Install Antivirus and Configure various settings

LLO 24.1 Replace internal components of PC

● **Laboratory Planning:**

Sr. No.	CO	LLO	Name of Experiment	Planned Date		Actual Date	Remark/ Assessment Date with Staff sign
				From	To		
1.	CO105.1	1.1 1.2	Desktop/laptop/server type identification and its specification	A:04/08/2026 B:01/08/2026 C:05/08/2026	A:06/08/2026 B:06/08/2026 C:06/08/2026		
2.	CO105.1	2.1 2.2	Identification and cleaning of Components	A:06/08/2026 B:06/08/2026 C:06/08/2026	A:11/08/2026 B:10/08/2026 C:12/08/2026		
3.	CO105.1	3.1	Preventive Maintenance of PC	A:11/08/2026 B:10/08/2026 C:12/08/2026	A:13/08/2026 B:13/08/2026 C:13/08/2026		
4.	CO105.1	4.1	Perform Internal socket connections	A:13/08/2026 B:13/08/2026 C:13/08/2026	A:18/08/2026 B:17/08/2026 C:19/08/2026		
5.	CO105.1	5.1	Perform BIOS settings	A:18/08/2026 B:17/08/2026 C:19/08/2026	A:20/08/2026 B:20/08/2026 C:20/08/2026		
6.	CO105.2	6.1 6.2	Manage a Hard disk	A:20/08/2026 B:20/08/2026 C:20/08/2026	A:25/08/2026 B:24/08/2026 C:26/08/2026		
7.	CO105.3	7.1	Installation of Windows Operating System	A:25/08/2026 B:24/08/2026 C:26/08/2026	A:27/08/2026 B:27/08/2026 C:27/08/2026		
8.	CO105.3	8.1	Installation of Unix family Operating System	A:27/08/2026 B:27/08/2026 C:27/08/2026	A:01/09/2026 B:03/09/2026 C:02/09/2026		
9	CO105.4	10.1 10.2	Installation of local and Network printer	A:01/09/2026 B:03/09/2026 C:02/09/2026	A:03/09/2026 B:07/09/2026 C:03/09/202		
10	CO105.4	11.1	Share devices, files and folders	A:03/09/2026 B:07/09/2026 C:03/09/2026	A:08/09/2026 B:10/09/2026 C:09/09/2026		
11	CO105.4	12.1	Installation of scanner	A:08/09/2026 B:10/09/2026 C:09/09/2026	A:10/09/2026 B:14/09/2026 C:10/09/2026		
12	CO105.4	13.1	Set Input/output devices	A:10/09/2026 B:14/09/2026 C:10/09/2026	A:15/09/2026 B:17/09/2026 C:16/09/2026		
13	CO105.5	15.1	Connect devices to external port	A:15/09/2026 B:17/09/2026 C:16/09/2026	A:17/09/2026 B:21/09/2026 C:17/09/2026		
14	CO105.5	16.1	Networking devices connection	A:17/09/2026 B:21/09/2026 C:17/09/2026	A:22/09/2026 B:24/09/2026 C:23/09/2026		
15	CO105.5	17.1	Fiber optic cable construction	A:22/09/2026 B:24/09/2026 C:23/09/2026	A:24/09/2026 B:28/09/2026 C:24/09/2026		

16	CO105.5	19.1	Setup Wi-Fi environment	A:24/09/2026 B:28/09/2026 C:24/09/2026	A:29/09/2026 B:01/10/2026 C:30/09/2026		
17	CO105.5	20.1	Setup wired network environment	A:29/09/2026 B:01/10/2026 C:30/09/2026	A:01/10/2026 B:05/10/2026 C:07/10/2026		
18	CO105.5	21.1	Setup wireless I/O devices	A:01/10/2026 B:05/10/2026 C:07/10/2026	A:06/10/2026 B:08/10/2026 C:08/10/2026		
19	CO105.6	23.1	Anti-viruses installation	A:08/10/2026 B:08/10/2026 C:08/10/2026	A:15/10/2026 B:15/10/2026 C:14/10/2026		
20	CO105.6	24.1	Component replacement	A:15/10/2026 B:15/10/2026 C:14/10/2026	A:20/10/2026 B:22/10/2026 C:22/10/2026		

- Direct Assessment Criteria:(Practical)**

Performance Indicators		Weightage in %
Process Related (15 Marks)		30%
1	Use of appropriate tool to solve the problem	10%
2	Operate Equipment Skillfully	10%
3	Follow safety measures	10%
Product Related (35 Marks)		70%
1	Quality of output achieved	10%
2	Answer to sample questions	20%
3	Submit report in time	40%
Total (50 Marks)		100%

- Rules for Formative Assessment:**

- Formative assessment of each practical is based on Process related (15 marks) and Product related (35 marks) - Total out of 50 marks as per the assessment scheme prescribed in manual given by MSBTE
- The Performance Indicators of each practical is assessed according to product and process related skills. (Sample format is as given in above table)
- Final assessment of 100 Marks for all practical.
Following is the distribution of 50 Marks
 - Summative Assessment (SA-PR) for 50 Marks will be conducted by MSBTE after the completion of the term.
 - Formative assessment (FA-PR) will carry 50 Marks

4. Final Formative Assessment (F.A.) of 50 marks is calculated as follows:

$$FA\ Marks = ((Total\ obtained\ marks) * 50) / (50 * Total\ Number\ of\ parcticals)$$

5. A comprehensive Final Practical End Semester examination (SA-PR of 50 Marks) will be conducted by MSBTE at the end of semester. Examiner for this examination will be External examiner. The schedule of MSBTE

Practical Examination will be display on Notice board prior to examination.

• **Practical wise LLO-CO Mapping:**

Practical No.	LLO	CO303.1	CO303.2	CO303.3	CO303.4	CO303.5	CO303.6
1.	1.1,1.2	✓					
2.	2.1 2.2	✓					
3.	3.1	✓					
4.	4.1	✓					
5.	5.1	✓					
6.	6.1 6.2		✓				
7.	7.1			✓			
8.	8.1			✓			
10.	10.1				✓		
11.	11.1				✓		
12.	12.1				✓		
13.	13.1				✓		
15	15.1					✓	
16	16.1					✓	
17	17.1					✓	
19	19.1					✓	
20	20.1					✓	
21	21.1					✓	
23	23.1						✓
24	24.1						✓

- **References:**

Books:

Sr.No	Author	Title	Publisher
1	James, K.L.	1 The computer hardware installation, interfacing, troubleshooting and maintenance	PHI Learning, New Delhi, 2014 ISBN: 978-81-203-4798-4
2	Minasi, Mark	The Complete PC Upgrade And maintenance Guide	BPB Publication, New Delhi ISBN:978-81-265-0627-9
3	Kadam, Sachin	Computer Architecture and Maintenance Vol.1	Shroff Publication, Mumbai ISBN: 978-9350230244
4	Craig Zacker, John Rourke	The Complete Reference PC Hardware	Mc Graw Hill Education ISBN-13:978-0070436060

- **Web sites :**

1. <http://www.ciscopress.com/articles/article.asp?p=2086239&seqNum=4> Essential Introduction to Computer
2. <http://www.instructables.com/id/Computer-Assembly/>
3. <http://www.liutilities.com/how-to/operate-a-laptop-computer/>
4. <https://video.search.yahoo.com/search/video?fr=mcafee&ei=UTF-8&p=hardware+maintenance+and+troubleshoot&guccounter=1>
5. geeksforgeeks.org/how-to-set-up-a-LAN-network

- **Tools:** 1. Google Classroom to share study material.

Mrs.R.P.Shinde
(Course Teacher)

Mrs. R. Y. Thombare
(HOD- AN)

CC: 1. Lab File
2. Course File-WPC (311002)