

Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING

Academic Year: 2025–2026

K2-A

Academic Year: 2025-26

Date: 10/12/2025

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

Program & Code: Artificial Intelligence & Machine Learning (AN) Course Code & Abbr.: 312001 (BLP)

Course Name: Linux Basics

Name of Faculty: Mr. H. M. Gaikwad

Class: FYAN-Neural

Course Index: 204

Semester: II

Scheme: K

Total Hrs: 30

• Course Outcomes (COs):

By learning course Linux Basics (BLP-312001) First Year students will be able to:

- CO204.1 - Install Linux operating system.
- CO204.2 - Execute general purpose commands of the Linux operating system.
- CO204.3 - Manage files and directories in Linux operating system.
- CO204.4 - Use vi editor in Linux operating system.
- CO204.5 - Write programs using shell script.

• Teaching-Learning and Assessment Scheme:

Course Code	Course Title	Abbr	Course Category/s	Learning Scheme				Credits	Paper Duration	Assessment Scheme														
				Actual Contact Hrs/Week			SLH			Theory			Based on LL Practical			Based on SL								
				CL	TL	LL				FA-TH		SA-TH		Total		FA-PR		SA-PR						
										Max	Max	Max	Min	Max	Min	Max	Min	Max	Min					
312001	Linux Basics	BLP	DSC	2	-	2	-	4	2	-	-	-	-	25	10	25@	10	-	-	50				

@ indicates Internal Practical Exam.

• Laboratory Learning Outcome (LLO)

LLO 1.1 * Install and configure the Linux operating system.

LLO 2.1 * Execute the following general-purpose Linux commands. 1) cal 2) date 3) echo 4) printf 5) bc 6) script 7) mailx 8) man 9) clear

LLO 3.1 * Execute the following general-purpose Linux commands. 1) passwd 2) who 3) who am i 4) uname 5) tty 6) stty 7) ps 8) kill 9) sleep

LLO 4.1 * Execute the following file and Directory manipulation commands along with different options. 1) pwd 2) cd 3) mkdir 4) rmdir 5) ls 6) cat 7) rm 8) mv 9) cp

LLO 5.1 * Execute the following file and Directory manipulation commands along with different options. 1)touch 2) more 3) 1p 4) file 5) we 6) cmp 7) comm 8) diff 9) split

LLO 6.1 * Execute the following Linux commands for compressing decompressing and archiving files. 1) gzip 2) gunzip 3) tar 4) tar -c 5) tar -x 6) zip 7) unzip

LLO 7.1 * Execute the following commands to change file and directory permissions. 1) ls -l, ls -ld 2) chmod (with all options) 3) chown 4) chgrp permissions.

LLO 8.1 * Use vi editor and execute all editor commands.

LLO 9.1 Use wildcard characters (e.g., *, ?, []) to list and manipulate specific sets of files within the directory.

LLO 10.1 a) Create a text file with various lines of text.

b) Create a complex pipeline by chaining multiple commands together using pipes (|).

LLO 11.1 *Create input and output redirection in Linux.

LLO 12.1 * Execute the following filters commands inLinux. 1) pr 2) head 3) tail 4) cut 5) paste 6) sort 7) uniq 8) tr

LLO 13.1 * Execute commands grep, egrep and sed inLinux.

LLO 14.1 Read user input, exit and exit status commands, expr, and logical operators in shell scripts.

LLO 15.1 * Write the Shell script by using the "if"statement.

LLO 16.1 Write a Shell script by using the "while" loop.

LLO 17.1 Write a Shell script by using the "for"- loop.

• **Lab Plan:**

Sr. No.	CO	LLO	Name of Practical	Planned Date	Performance Date	Remarks	Related Self Learning (if any)
1.	CO204.1	1.1	Install the Linux Operating System.	A-17/12/2025 B-15/12/2025 C-16/12/2025			
2.	CO204.2	2.1	Execute general-purpose Linux commands-cal, date, echo, bc, script, man, clear	A-24/12/2025 B-22/12/2025 C-23/12/2025			
3.	CO204.2	3.1	Execute general-purpose Linux commands-passwd, who, uname, whoami, , tty, ps, sleep, kill	A-31/12/2025 B-29/12/2025 C-30/12/2025			
4.	CO204.3	4.1	Execute file and Directory manipulation commands-pwd, cd, mkdir, rmdir, ls, cat, rm, mv, cp	A-07/01/2026 B-05/01/2026 C-06/01/2026			
5.	CO204.2 CO204.3	5.1	Execute file and Directory manipulation commands-touch, more, wc, cmp, diff, split	A-14/01/2026 B-12/01/2026 C-13/01/2026			
6.	CO204.2 CO204.3	6.1	Execute Linux commands for compressing, decompressing, and archiving files.	A-21/01/2026 B-19/01/2026 C-20/01/2026			
7.	CO204.2 CO204.3	7.1	Execute Linux commands to Change file and directory permissions	A-04/02/2026 B-02/02/2026 C-03/02/2026			
8.	CO204.4	8.1	Use the vi editor to create and edit files.	A-11/02/2026 B-09/02/2026 C-10/02/2026			
9.	CO204.2 CO204.3	11.1	Execute input output redirection in Linux.	A-18/02/2026 B-16/02/2026 C-17/02/2026			
10.	CO204.2 CO204.3	12.1	Execute filters commands in Linux-head, tail, cut, paste, sort, unique, tr.	A-25/02/2026 B-23/02/2026 C-24/02/2026			
11.	CO204.2 CO204.3	13.1	Execute filters commands in Linux-grep, egrep, sed	A-04/03/2026 B-02/03/2026 C-03/03/2026			
12	CO204.5	15.1	Execute the Shell script by using the if statement.	A-11/03/2026 B-09/03/2026 C-10/03/2026			
13	CO204.5	16.1	Execute a Shell script by using the while loop.	A-18/03/2026 B-16/03/2026 C-17/03/2026			

• **Formative Assessment Criteria :**

Performance Indicators		Weightage
Process Related (10 Marks)		30%
1	Logic formation	10%
2	Debugging ability	15%
	Follow ethical practices	5%
Product Related (15 Marks)		70%
1	Interactive GUI	20%
2	Answer to sample questions	20%
3	Expected output	20%
4	Timely submission	10%
Total (25 Marks)		100%

- **Rules for Formative Assessment:**

1. Formative assessment of each practical is based on Process related (10 marks) and Product related (15 marks) - Total out of 25 marks as per the assessment scheme prescribed by MSBTE,
2. Final assessment of 25 Marks for all practicals.

Following is the distribution of 25 Marks –

- i. Summative Assessment (SA-PR) for 25 Marks will be conducted by MSBTE after the completion of the term.
- ii. Formative assessment (FA-PR) will carry 25 Marks

3. Final Formative Assessment (F.A.) of 25 marks is calculated as follows:

$$FA \text{ Marks} = ((Total \text{ obtained } marks) * 25) / (25 * Total \text{ Number of practicals})$$
4. A comprehensive Final Practical End Semester examination (SA-PR of 25 Marks) will be conducted by MSBTE at the end of semester. Examiner for this examination will be Internal examiner.

The schedule of MSBTE Practical Examination will be display on Notice board prior to examination.

- **Practical wise LLO-CO Mapping:**

PR. No.	LLO	CO203.1	CO203.2	CO203.3	CO203.4	CO203.5
Practical 1	1.1	✓				
Practical 2	2.1		✓			
Practical 3	3.1		✓			
Practical 4	4.1			✓		
Practical 5	5.1		✓	✓		
Practical 6	6.1		✓	✓		
Practical 7	7.1		✓	✓		
Practical 8	8.1				✓	
Practical 9	11.1		✓	✓		
Practical 10	12.1		✓	✓		
Practical 11	13.1		✓	✓		
Practical 12	15.1				✓	✓
Practical 13	16.1				✓	✓

- **SUGGESTED LEARNING MATERIALS / BOOKS**

Sr.No	Author	Title	Publisher
1	Richard Petersen	Linux The Complete Reference	McGraw Hill, 6th edition
2	Richard Blum	Linux command line and shell scripting	Wiley India
3	Prof. Dayanand Ambawade	Linux Lab: Hands on Linux	Dreamtech Press
4	Sumitabha Das	Unix Concepts and Applications	McGraw-Hill Education (India)

- **LEARNING WEBSITES & PORTALS**

Sr.No	Link / Portal	Description
1	https://maker.pro/linuthtutorial/basic-linux-commands-for-beginners	Linux Basic Commands
2	https://www.guru99.com/must-know-linux-commands.html	Linux Basic Commands
3	https://www.shellscrip.sh/	Shell Scripts and Programs
4	https://www.tutorialspoint.com/unix/shell_scripting.html	Shell Scripts and Programs examples
5	https://spoken-tutorial.org/tutorial	Online Course

- **Tools for conducting Practicals:**

- 1.Red Hat Linux
- 2.Google classroom
- 3.YouTube
4. MKCL LMS-Learn Live

Mr. H.,M.Gaikwad
Faculty

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