**Lab Name: Network Lab**

**Lab Incharge:** Prof. Waghmare A.I

**Description:**

A network lab, or network laboratory, refers to a physical or virtual environment where networking professionals can design, configure, test, and troubleshoot network setups and technologies. It provides a controlled setting for experimenting with various network configurations, protocols, and devices without impacting a live production network.Lab is equipped with 20 machines with internet facility.

**Area of Practical:**  
70 sq.mtr

List of Lab Experiments:

1. Develop an application that uses GUI components, Font and Colours.

2. Develop an application that uses Layout Managers and event listeners.

3. Develop a native calculator application.

4. Write an application that draws basic graphical primitives on the screen.

5. Develop an application that makes use of database.

6. Develop an application that makes use of RSS Feed.

7. Implement an application that implements Multi threading.

8. Develop a native application that uses GPS location information.

9. Implement an application that writes data to the SD card.

10. Implement an application that creates an alert upon receiving a message.

11. Write a mobile application that creates alarm clock.

**Lab Name: Unix Lab**

**Lab Incharge:** Prof. Khan S.T

**Description:**

The purpose of a Unix lab is to enable users to learn and practice Unix commands, shell scripting, system administration tasks, network configuration, security measures, and other aspects of Unix-based operating systems. It offers a safe and controlled environment for experimentation and learning without affecting production systems.Lab is equipped with 20 machines with internet facility.

**Area of Practical:**  
70 sq.mtr

List of Experiments:

1. Hands on Unix Commands

2. Shell programming for file handling.

3. Shell Script programming using the commands grep, awk, and sed.

4. Implementation of various CPU scheduling algorithms (FCFS, SJF, Priority).

5. Implementation of various page replacement algorithms (FIFO, Optimal, LRU).

6. Concurrent programming; use of threads and processes, system calls (fork and v-fork).

7. Study pthreads and implement the following: Write a program which shows the performance.

8. Improvement in using threads as compared with process.(Examples like Matrix Multiplication.

9. Hyper Quick Sort, Merge sort, Traveling Sales Person problem).

10. Implementation of Synchronization primitives – Semaphore, Locks and Conditional Variables.

11. Implementation of Producer-Consumer problem, Bankers algorithm.

12. Implementation of various memory allocation algorithms, (First fit, Best fit and Worst fit), Disk. 13. Scheduling algorithms (FCFS, SCAN, SSTF, C-SCAN). 14. Kernel reconfiguration, device drivers and systems administration of different operating systems. Writing utilities and OS performance tuning

**Lab Name: Software Lab**

**Lab Incharge:** Prof. Patil P.A

**Description:**

The laboratory provides computer competent environment in the department. Lab is equipped with 20 machines with internet facility. Lab is utilised for planning, modelling, analysing & designing, practical’s of various structures with the help of student’s version of Finite Element Modelling & Designing software.

**Area of Practical:**  
70 sq.mtr

Lab Experiments List:

1. Design, develop, code and run the program in any suitable language to solve the commission problem. Analyze it from the perspective of data flow testing, derive at least 10 different test cases, execute these test cases and discuss the test results.

2. Design, develop, code and run the program in any suitable language to solve the NextDate problem. Analyze it from the perspective of decision table-based testing, derive at least 10 different test cases, execute these test cases and discuss the test results.

3. Design, develop, code and run the program in any suitable object-oriented language to solve the calendar problem. Analyze it from the perspective of OO testing, derive test cases to test the method that increment the date and the method that increments the month., execute these test cases and discuss the test results.

4. Design, develop, code and run the program in any suitable object-oriented language to solve the currency converter problem. Analyze it from the perspective of use casebased system testing, derive appropriate system test cases, execute these test cases and discuss the test result.

5. Design, develop, code and run the program in any suitable language to implement an absolute letter grading procedure, making suitable assumptions. Determine the basis paths and using them derive different test cases, execute these test cases and discuss the test results.

6. Design, develop, code and run the program in any suitable language to implement the binary search algorithm. Determine the basis paths and using them derive different test cases, execute these test cases and discuss the test results.

**Lab Name: Programming Lab**

**Lab Incharge:** Prof. Kambale R.V

**Description:**

The C programming Lab has 70 computers with Turbo C, C++ compilers and MS office packages. This Lab for I&II Semester students to practice programming in C language by implementing  C control structures , pointers, array operations, etc. In odd semesters, this lab is also used by S5 students as Computer Graphics lab for imparting basic knowledge about line, circle, ellipse, polygon filing, clipping algorithms, implementing 2D and 3D transformations etc..

**Area of Practical:**  
70 sq.mtr

List of Experiments:

1. Install the Android SDK and developer tools and build a test project to confirm that those tools are properly installed and configured.

2. Write a program using a Table Layout for our restaurant data entry form; add a set of radio buttons to represent the type of restaurant.

3. Write a program using activity class to show different events.

4. Write a program to send user from one application to another. (For example redirection to map).

5. Write a program to play audio files.

6. Write a program to play video files.

7. Write a program to capture image using built in camera.

8. Write a program to send SMS.

9. Write a program to convert text to speech.

10. Write a program to call a number.

**Lab Name: Hardware Lab**

**Lab Incharge:** Prof. Sayyad M.M

**Description:**

The Hardware Laboratory has various types of microprocessor, micro controller trainer kits along with interfacing modules to demonstrate the detailed applications of microprocessors. The purpose of this laboratory is to train the students to be familiar with the software and hardware of microprocessors so that they can gain enough experiences to meet the demand of the microprocessor era and principles of combinational and sequential digital logic design and optimization at a gate level.

**Area of Practical:**  
70 sq.mtr

**Lab Experiments List for Digital Logic:**

1. Verify the truth table of various logic gates (NOT, AND, OR, NAND, NOR, EX-OR, & EX-

NOR).

2. Design and implement following code conversion:

(a) Binary to Gray (b) Gray to Binary (c) Excess 3 codes to BCD (d) BCD to Excess 3 codes.

3. Design and verify a half adder and full adder.

4. Implementation of Multiplexer, Demultiplexer, Encoder and Decoder.

5. Study of flip flops:

(a) RS flip flop (b) JK flip flop (c) D flip flop (d) T flip flop and applications of flip flop for counter

design

**Lab Name: Multimedia Lab**

**Lab Incharge:** Prof. Kale J.G

**Description:**

A multimedia lab is a specialized facility equipped with the necessary hardware, software, and tools to create, edit, and manipulate various forms of multimedia content. Multimedia refers to the integration of different media types, such as text, images, audio, video, and animations, to convey information or create engaging experiences.

**Area of Practical:**  
70 sq.mtr

**Lab Experiments List for Microprocessor:**

1. 8085 and 8086 kit familiarization and basic experiments.

2. Arithmetic operation of 16-bit binary numbers.

3. Programming exercise: sorting, searching and string.

4. 8255 interfaces to 8086.

5. Assembly language programming of 8051

**Lab Name: Database Lab**

**Lab Incharge:** Prof. Visrojwar P.S

**Description:**

A database lab is a facility or environment that provides resources and tools for learning and experimenting with database management systems (DBMS) and related technologies. It is a dedicated space where students, researchers, and database professionals can practice working with databases, design schemas, write queries, and perform various tasks related to database administration and development..

**Area of Practical:**  
70 sq.mtr

Lab Experiments Objective:

1. To design a database adopting the principles of relational database model.

2. To practice and master DDL and DML through SQL.

3. To learn building efficient queries to interact with a database. Lab Experiments List: 1. Creation of databases and use of SQL commands (DDL, DML and DCL). 2. Suitable exercises to practice SQL commands may be given for Insert, Update and Delete. 3. Write SQL procedure for an application which uses exception handling.

4. Write SQL procedure for an application with cursors.

5. Write SQL for implementing Nested Queries.

6. Write SQL for implementing Join Queries.

7. Write a DBMS program to prepare reports for an application using functions.

8. Write SQL block containing triggers.

9. Write SQL block containing stored procedures.

10. Develop a menu driven, GUI-based database application in any one of the domains such as Banking, Billing, Library management, Payroll, Insurance, Inventory, Healthcare etc. integrating all the features specified in the above exercises.