KARNATAK LAW SOCIETY'S

GOGTE INSTITUTE OF TECHNOLOGY

UDYAMBAG, BELAGAVI-590008

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi)

(APPROVED BY AICTE, NEW DELHI)

SKILL LABS

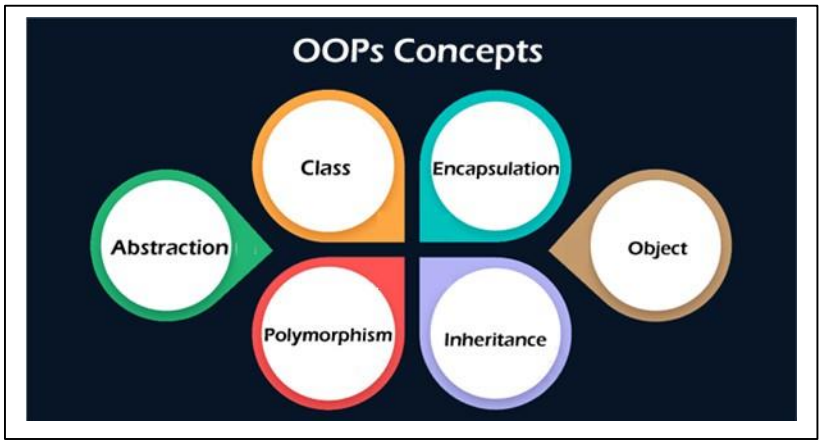
FOR

V Semester Information Science & Engineering Students

DEPARTMENT OF

INFORMATION SCIENCE & ENGNEERING

KLS GOGTE INSTITUTE OF TECHNOLOGY



Elevating Object Oriented Programming Skills

FOR

Students of V Semester

Overview

The Object-Oriented Programming (OOP) Skill Lab introduces students to essential programming concepts using C++. It focuses on core OOP principles, such as encapsulation, inheritance, polymorphism, and abstraction, which are foundational to modern software design. Through hands-on exercises, students gain practical experience in building structured and reusable code. OOP is integral to designing complex systems that simulate real-world entities and their interactions. It is widely used in software development for applications in robotics, embedded systems, and simulation tools, making it essential for computer, electronics, and mechanical engineers.

Mode of Conduction of each Module

Theory: 02 Hours
Demo: 01 Hours
Lab Sessions: 03 Hours
Total duration: 06 Hour
Certification exam: 03 Hours

Module 1: Introduction to OOP and Basics

- Overview of Object-Oriented Programming
- Key Principles
- Basic Syntax and Structure
- Functions and Scope

Module 2: Classes and Objects

- Defining Classes & Creating Objects
- Class members
- Access Specifiers
- Constructor and Destructor
- Static Member Variables and Functions
- Friend Functions and Friend Classes
- Inline Functions

Module 3: Advanced Class Features

- Operator Overloading
- Function Overloading
- Overloading Arithmetic and Relational Operators
- Overloading Unary Operators
- Function Templates
- Default Arguments

Module 4: Inheritance and Polymorphism

- Types of Inheritance
- The 'protected' Keyword
- Constructor and Destructor Calls in Inheritance
- Function Overriding and Virtual Functions
- Pure Virtual Functions and Abstract Classes

Module 5: Advanced OOP Concepts

- Function Templates
- Class Templates
- Template Specialization
- Basics of Exception Handling: try, catch, throw
- Custom Exception Classes
- File I/O Basics: Reading and Writing to Files

Coordinators:

1) Name**: Dr. Kiran K. Tangod**
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2) **Name: Dr. Padma Dandannavar**
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3) Name: **Prof. Shrivatsa D. Perur**
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4) **Name: Prof. Anusha Chogund**
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   E-mail: apcogund@git.edu

Outcomes

The OOP Skill Lab equips students with essential programming skills, enhancing problem-solving, and promoting efficient software design. Students gain hands-on experience in real-world coding, mastering core OOP concepts like encapsulation and inheritance. This lab prepares them for advanced studies, careers in software development, and learning other languages by building a solid foundation in object-oriented principles.

Acceptance

In order to accept and start the training program, students are required to register with the respective department. Details to be provided by the student to the department include: **Name, USN, UID, Mobile No, Email id**

Terms and Conditions

- Only students who have paid a skill lab fee to the institution are eligible for the training.
- The students must maintain 90% attendance for obtaining the skill lab certificate.
- Students must attend training as per scheduled time

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Computer Hardware and Networking

FOR

III Semester Information Science and Engineering Students

DEPARTMENT OF

Information Science and Engineering

KLS GOGTE INSTITUTE OF TECHNOLOGY

Computer Hardware and Networking

FOR

Students of III Semester

Overview

Students shall apply the skills learnt in this Skill Lab. They will be learning the procedures to install, configure, and troubleshoot computers, installation of operating systems and soft wares. Learn the fundamentals of connecting computers to networks.

Mode of Conduction of each Module

Theory: 02 Hours
Demo: 01 Hours
Lab sessions: 03 Hours
Total duration: 06 Hours
Certification exam: 02 Hours

Module 1: Fundamentals of Computers

Basics of PC, Laptops & Components Introduction to PC Hardware: PC Components, Memory, Adapter cards and extension slots, Hard disk drives cables and adapters, Input devices and output devices. Computer disassembly & Assembly, Preventive maintenance and trouble shooting. Advanced computer Hardware: Advanced computer Functionality ports, Configuration for specialized computers. Laptops and other Mobile Devices: Laptop hardware and component installation and configuration, Preventive Maintenance and troubleshooting process.

Module 2: O.S. Installation and Configuration.

Basics of OS with Installations & Configurations Windows Installation & Upgrades, Disk Management (storage device types, Hard drive partitioning, Partitions and logical drives), Windows Configuration - Configure Windows with Control Panels, System Administration.

Module 3: Name

Module 2: O.S. Installation and Configuration

Basics of OS with Installations & Configurations Windows Installation & Upgrades, Disk Management (storage device types, Hard drive partitioning, Partitions and logical drives), Windows Configuration -

Module 4: Name

Module 4: Linux

Linux fundamentals, linux system commands

Coordinators

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Outcomes

- The ability to design, install, and maintain computer systems and networks.
- Prepares individuals for careers like network administrators and IT technicians by teaching hardware management, network configuration, and cybersecurity essentials.
- Ensuring smooth technological operations in organizations.

Acceptance

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SKILL LABS

FOR

3rd year ISE Students

DEPARTMENT OF

Information Science and Engineering

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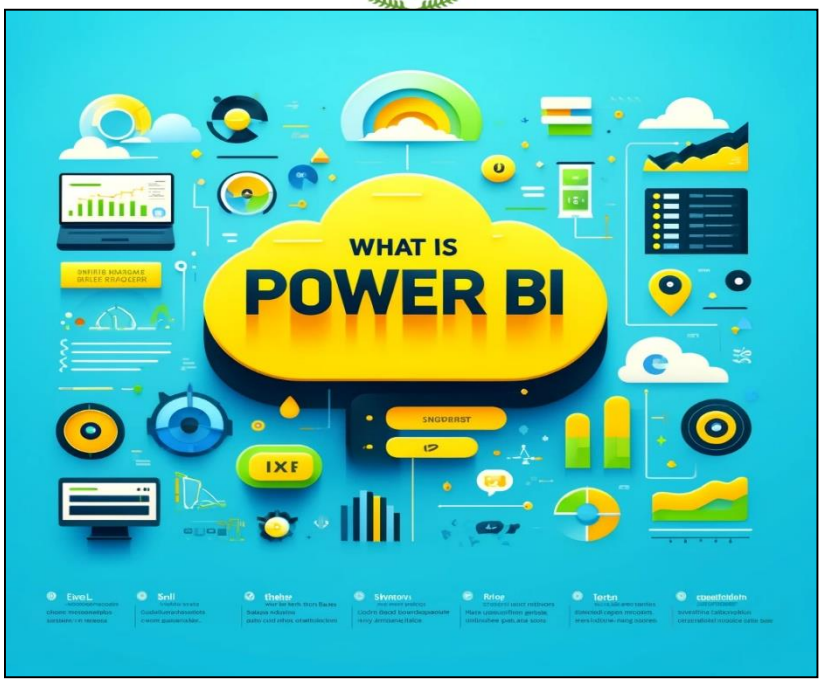
KLS GOGTE INSTITUTE OF TECHNOLOGY



Power BI

FOR

Students of 3rd year

Overview

The Power BI Skill Lab offers hands-on experience in mastering data visualization and business analytics. Participants will explore data integration, transformation, and dashboard creation using Power BI tools. This practical lab empowers learners to derive actionable insights and make data-driven decisions efficiently through interactive reports and visuals.

Mode of Conduction of each Module

Theory: 02 Hours
Demo: 01 Hours
Lab sessions: 03 Hours
Total duration: 06 Hours
Certification exam: 03 Hours

Module 1: Introduction

- Power BI Architecture
- Power BI introduction and overview
- Introduction Power BI desktop and Power BI in Excel
- Connecting with Data
- Introduction to Power BI Components

Module 2: Power Query

- Installation Requirements and Configuration
- Different versions of Power Query
- Query Editor
- Transformation GUI
- Row, column & Text Transformations

Module 3: Power Pivot and Data Sources

- Using SQL Server data.
- Loading data from cubes.
- Load data from text files.
- Using data from Excel sheets.
- Loading data via data feeds

Module 4: Building PivotTables on Power Pivot

- Building pivot tables on top of Power Pivot.
- Using Pivot Charts & working with Slicers.
- Combine Power Pivot data with Sparklines.

Coordinators

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Name: Prof. Shrivatsa D. Perur
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Outcomes

The Power BI Skill Lab equips participants with essential data analytics skills, enabling them to create interactive reports, automate data workflows, and uncover valuable insights. It enhances proficiency in visual storytelling, improves decision-making, and boosts career prospects in data-driven roles across various industries.

Acceptance

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SKILL LABS

FOR

3 rd Semester Information Science & Engineering Students

DEPARTMENT OF

Information Science & Engineering

KLS GOGTE INSTITUTE OF TECHNOLOGY

UI/UX DESIGN SKILL LAB

FOR

Students of 3rd Semester

Overview

This UI/UX Skill Lab equips engineering students with practical design skills that are highly relevant to modern engineering challenges, especially in the context of emerging technologies like AI, IoT, and AR/VR. By combining design expertise with their engineering backgrounds, students enhance their employability in fields that require cross-functional collaboration and user-centric design solutions**.**

Job Prospects- UI/UX Designer, Product Designer, **Prototyping Specialist,** Software and Mobile App Development

Mode of Conduction of each Module

Theory: 2 Hours/Day
Demo: 1 Hour/Day
Lab sessions: 3 Hours/Day
Total duration: 6 Hours/day
Certification exam: 2 Hours

Module 1: Figma Fundamentals and UI/UX Basics

Introduction to Figma's interface, key UI/UX design principles, and creating reusable components.

Module 2: Advanced Design Techniques and Vector Editing

Delving deeper into vector tools, advanced typography, color styles, and building cohesive design systems.

Module 3: Prototyping and Interactivity

Focus on building interactive prototypes, adding animations, and gathering feedback through user testing.

Module 4: Collaboration, Handoff, and Design Systems

Collaborative design processes, preparing files for developers, and building scalable design systems.

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Coordinators

Names:

1) Dr.K.S.Mathad, 9844665758, mathadks@git.ed

2) Dr.S.B.Deshpande , 9035280717, sbdeshpande@git.ed

3) N.V.Karekar , 9916609481, nvkarekar@git.edu

Outcomes

1. The skill will provide students with the ability to implement the key principles of UI/UX design in Figma, along with creating visually attractive and user-friendly interfaces for digital products and software applications.
2. Enable students to design interactive, clickable prototypes that simulate real-world user experiences, preparing them for roles in product development and user testing across various emerging technologies.
3. Students will be trained to collaborate seamlessly with cross-functional teams using Figma's cloud features, while also mastering developer handoff and version control to streamline project workflows.

Acceptance

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