KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI

SKILL LABS

Schedule of Skill labs offered at KLSGIT

Sl No	Department	Start date	End date	Title of Skill lab
1	Mechanical	30/12/2024	04/01/2025	MATLAB FOR MECHANICAL ENGINEERS

Skill lab (Detailed schedule)

Sl No	Department	Title of Skill lab	Semester & Division	Venue	Dates	Faculty name	Phone No	Email id
1	Mechanical	MATLAB FOR MECHANICAL ENGINEERS	V A,B,C	CC LAB	30/12/2024 04/01/2025	DR.MMN	998615902	mnadakatti@git.edu

SKILL LAB

ON

## MATLAB FOR MECAHNICAL ENGINEERS

For 5TH Semester Students

KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI
Department of MECHANICAL ENGINEERING

Overview:

MATLAB is a powerful tool for technical computing, integrating computation, visualization, and programming in a user-friendly environment. It enables matrix manipulations, plotting, algorithm development, and interfacing with other languages like C++ and Java. Mechanical engineering students can use MATLAB for final-year projects to design, simulate, and test prototypes, as well as analyze vibrations through DAQ systems. The software's capabilities also include creating 2D and 3D graphs and developing vibration-based applications.
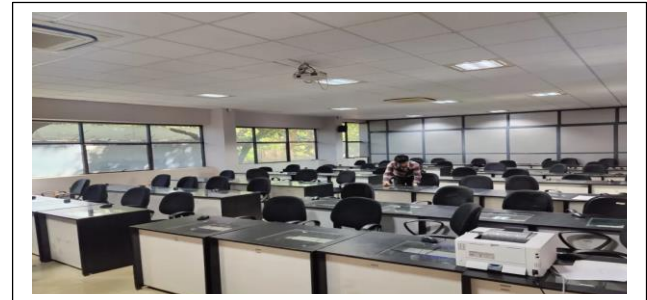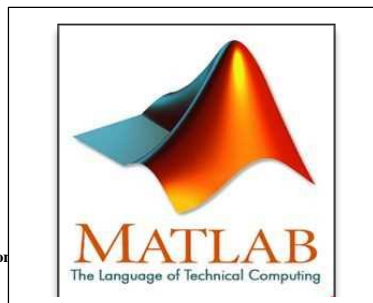

Mode of Conduction of each Module:
Theory: 00   Hours,
Demo: 5   Hours,
Lab Sessions: 25   Hours
Total duration: 30   Hour
Certification exam: 3 Hours

Module 1: Introduction

MATLAB INTRODUCTION
Capabilities, System requirements, MATLAB work environment
, operators, plotting commands, MATALB Graphics, Uses.
Arrays, vector, matrix, size
Multidimensional arrays
Matrix manipulations- Matrix creation, Basic functions

Module 3: Name

Description

GRAPHICS IN MATLAB
1. Graphics in MATLAB -2D plots and 3-D Plots
2. Adding titles, axis labels and annotations
3. Specifying line styles and colors.
4. Demonstration through running ready programs
5. Demonstration

Module 2: Variables

Special variables and constants, matrices and vectors, examples
1. **Arithmetic functions, Relational operators, Logical operation**
2. **Matrix functions – transposing a matrix, Matrix inversion**
3. **Types of ERRORs in MATLAB programs**
Vector Generation
Magic square, data from excel to MATLAB, array operations, MATLAB m-files,
Multiple plots in same graph, 3-D plots
Demonstration

Module 4: Name

Description

MATLAB FOR MACHINE LEARNING APPLICATIONS (ML)
1. Introduction to the applicability of MATLAB for AI & ML
2. Linear Regression Analysis : Theory + Demonstration
3. Logistical Regression Analysis: Thero + Demonstration.

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

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

Coordinators:

Name DR.M.M.NADAKATTI
Dept. Of
MECHANICAL
ENGG.
Phone: 99861502
E-mail: mnadakatti   @git.edu

Outcomes

➢ Design and Simulation Engineer
➢ Data Analyst/Engineer
➢ Automation and Control
➢ Systems Engineer
➢ Vibration and Structure

Schedule of Skill labs offered at KLSGIT

Sl No	Department	Start date	End date	Title of Skill lab
1	Mechanical Engineering			Machining Fundamentals Lab: Techniques in Lathe, Milling, and Surface Finishing

Skill lab (Detailed schedule)

Sl No	Department	Title of Skill lab	Semester & Division	Venue	Dates	Faculty name	Phone No	Email id
1	Mechanical Engineering	Machining Fundamentals Lab: Techniques in Lathe, Milling, and Surface Finishing	III semester	Machine Shop Lab		Prof. Mahesh A Kori	9028874765	maheshkori@git.edu

SKILL LAB ON
Machining Fundamentals Lab: Techniques in Lathe, Milling, and Surface Finishing
For III Semester Students

KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI
Department of Mechanical Engineering

Overview:

Brief overview of the skill lab & its relevance in engineering, emerging technology & job prospects.

- ❖ Skilling in Machining Operations (Lathe, Milling and surface finishing operations).
- ❖ Equip participants with hands-on experience in operating lathe, milling, and finishing machines to enhance their practical machining skills.
- ❖ Teach effective techniques for precision machining, including cutting, shaping, and finishing metal and other materials.

Mode of Conduction of each Module:

Theory:	10	Hours
Demo:	10	Hours
Lab sessions:	16	Hours
Total duration:	36	Hours
Certification exam:	3	Hours

Module 1: Prerequisites
- ➢ Concept of Orthogonal cutting & Oblique cutting.
- ➢ Types of Cutting Tools and their materials
- ➢ Significance of Process Plan and Process Sheet.
- ➢ Limits fits & tolerance (Clearance, Interference Transition fits. With practical demonstration.)

Module 3: Grinding Machine Operations
- ➢ Types of Grinding Process
- ➢ Lapping, Honing and Buffing processes
- ➢ Cylindrical Surface finishing by grinding machine
- ➢ Flat Surface finishing by grinding machine
- ➢ Grinding and process variables

Module 2: Lathe Machine Operations
- ➢ Types of Taper Turning methods and its calculations
- ➢ External and Internal thread cutting operations (and also by using Taps, Dies)
- ➢ Left-hand and Right hand threads cutting and significance
- ➢ Effect of Cutting speed, feed & depth of cut of machine operations. (Manual and Auto feed)

Module 4: Shaping, Broaching & Slotting Machine Operations

- ➢ Slot Cutting by Slotting Machine and Broaching Process
- ➢ Slot/Keyway Cutting

Terms and Conditions

Students who have paid a skill lab fee to the institution are eligible for training.

The students must maintain 90% attendance for obtaining the skill lab certificate.
Students must attend training as per scheduled time.

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

Coordinator:
Name: Mahesh A Kori
Dept. of Mechanical Engineering
Phone: +91 90288 74765
E-mail: maheshkori@git.edu

Outcomes
Proficiency in Machining Processes:
Familiarity with different manufacturing processes like turning, milling, and grinding and process variables.

CAREERS

- ❖ Manufacturing Industries
- ❖ Foundries
- ❖ Govt. Sectors Precision Labs

KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI
SKILL LABS

Schedule of Skill labs offered at KLS GIT

Sl No	Department	Start date	End date	Title of Skill lab
1	Mechanical Engineering			Advanced Machining Skillset Lab: Practical Techniques for Lathe, Milling, and Finishing

Skill lab (Detailed schedule)

Sl No	Department	Title of Skill lab	Semester & Division	Venue	Dates	Faculty name	Phone No	Email id
1	Mechanical Engineering	Advanced Machining Skillset Lab: Practical Techniques for Lathe, Milling, and Finishing	V semester	Machine Shop Lab		Prof. Mahesh A Kori	9028874765	maheshkori@git.edu

KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI
Department of Mechanical Engineering

Overview:

Brief overview of the skill lab & its relevance in engineering, emerging technology & job prospects.

- ❖ Skilling in Machining Operations (Lathe, Milling and surface finishing operations).
- ❖ Equip participants with hands-on experience in operating lathe, milling, and finishing machines to enhance their practical machining skills.
- ❖ Teach effective techniques for precision machining, including cutting, shaping, and finishing metal and other materials.

Mode of Conduction of each Module:

Theory:	10	Hours
Demo:	10	Hours
Lab sessions:	16	Hours
Total duration:	36	Hours
Certification exam:	3	Hours

Module 1: Milling Machine Operations
- ➢ Concept of Multi point cutting tools.
- ➢ Cutting speed, feed & depth of cut & machining time related to Milling machine operations.
- ➢ Multiple operations on Vertical and Horizontal Milling machines
- ➢ Gear cutting on milling machine by simple indexing method.

Module 3: Milling Machine Operations
- ➢ Groove cutting (Square, Vee, Tee, Dovetail)
- ➢ Gear cutting on milling machine by simple indexing method.
- ➢ Cutting and Building a Gear train and analyzing gear ratio, power ratio, speed ratio
- ➢ Gear Nomenclature and Indexing

Module 2: Lathe Machine Alignments
- ➢ Alignment and Calibration of Lathe Machine axis.
- ➢ Tool Wear, and effect of Tool wear on surface finish
- ➢ Effect of Cutting speed, feed & depth of cut & machining time.
- ➢ Surface Roughness measurements
- ➢ Runout
- ➢ Machining time calculation's

Module 4: Power drives
- ➢ Introduction to Power Transmission Types
- ➢ Comparison Chain Drive, Belt Drives and Gear Train
- ➢ Power ratio, Teeth ratio, Speed ratio Calculations
- ➢ Significance of frictional Losses

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Students must attend training as per scheduled time.

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

Coordinator:
Name: Mahesh A Kori
Dept. of Mechanical Engineering
Phone: +91 90288 74765
E-mail: maheshkori@git.edu

Outcomes
Proficiency in Machining Processes:
Familiarity with different manufacturing processes like turning, milling, and grinding and process variables

CAREERS

- ❖ Manufacturing Industries
- ❖ Foundries
- ❖ Govt. Sectors Precision Labs

Schedule of Skill labs offered at KLSGIT

Sl No	Department	Start date	End date	Title of Skill lab
1	Mechanical Engineering	4-11-24	9-11-24	Introduction to 3DEXPERIENCE Platform

Skill lab (Detailed schedule)

Sl No	Department	Title of Skill lab	Semester & Division	Venue	Dates	Faculty name	Phone No	Email id
1	Mechanical Engineering	Introduction to 3DEXPERIENCE Platform	3rd & 5th	CIDI Lab	4 to 9 Nov 2024	SPA, GVK, KDK, TTH, GDG, YNP	9008878759 7795510083 8951640346 9164626160 9448050777 9741456237	spavadhani@git.edu gvkulkarni@git.edu kdkattimani@git.edu tthawal@git.edu gdgokak@git.edu ynpotdar@git.edu

SKILL LAB

ON

Introduction to 3DEXPERIENCE Platform
For 3rd & 5th Semester Students

KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI
Department of Mechanical Engineering

Overview:

The Centre for Interdisciplinary Design and Innovation (CIDI) is a pioneering initiation of Gogte Institute of technology that fosters creativity and collaboration across various engineering disciplines. CIDI encourages students and faculty members to break traditional boundaries and work as a team on innovative projects that blend various engineering departments with design, technology. CIDI helps to work on various interdisciplinary projects and provides state-of-the-art facilities and resources, enabling students and faculties to develop prototypes, conduct research and explore new ideas. For students, it offers hands-on experience, enhancing their problem-solving skills and preparing them for real-world challenges. Faculty members benefit from a collaborative environment that supports cutting-edge research and interdisciplinary teaching methods. Overall, CIDI serves as a catalyst for innovation, driving both academic and practical advancements within the engineering community.

Mode of Conduction of each Module:

Theory: 10 Hours,
Demo: 26 Hours,
Lab Sessions: 26 Hours
Total duration: 36 Hours
Certification exam: Hours

Module 1: Introduction to 3DEXPERIENCE Platform

Module 3: Creating Collaborative Workspace and Project Management

Module 2: Introduction to 3DEXPERIENCE Interface, Boarding, Teams and Groups

Module 4: 2D Sketching and 3D Modelling
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Students must attend training as per scheduled time.

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

Coordinators:
Name: Prof. S P Avadhani
Dept. of Mechanical Engineering
Phone: 90088 78759
E-mail: spavadhani@git.edu

Name: Prof. Gourav Vivek Kulkarni
Dept. of Mechanical Engineering
Phone: 77955 10083
E-mail: gvkulkarni@git.edu

Outcomes

- **Practical Exposure to the Modelling software**
- **Hands-on experience to use simulation tools**
- **Knowledge about Interdisciplinary collaborative works**

Career prospects

Jobs in 3D Modelling and simulations roles, capability to take up consultancy works.