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

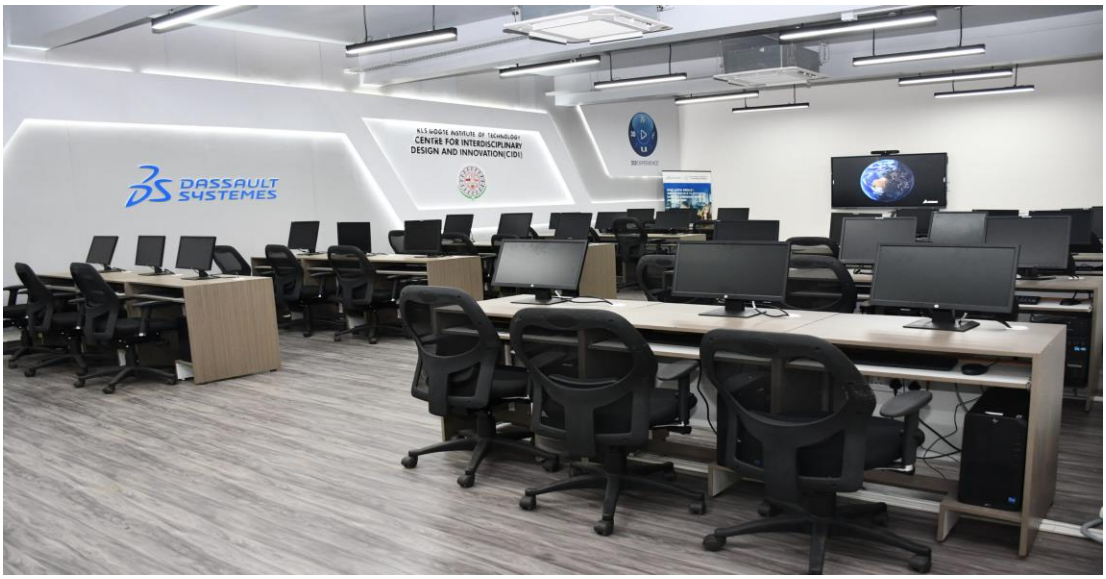
FOR

3rd & 5th Semester Mechanical Department Students

DEPARTMENT OF

MECHANICAL ENGINEERING

KLS GOGTE INSTITUTE OF TECHNOLOGY



Introduction to 3DEXPERIENCE Platform

FOR

Students of 3rd & 5th Semester

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

- Creating User accounts in 3DEXPERIENCE
- Introduction to 3DEXPERIENCE learning contents in EduSpace
- Introduction to Students and Academic communities

Module 2: Introduction to 3DEXPERIENCE Interface

- Menus and Toolbars, Finding Tools, The Specification Tree, Manipulating the Specification Tree, Selecting Objects with the Mouse, The Object/Action and Action/Object Approaches, Using the CATIA Dialog Boxes, Using Dialog Boxes and Right-click, Moving Objects with the Mouse, Compass, Graphic Properties.

Module 3: Sketcher and Part Design

- Geometry Creation, Lines, Polyline, Construction Geometry, Constraining the Sketch, Geometric and Dimensional Constraints
- Creating Grooves, Restrictions for Revolved Features, Shell the Model
- Create Pad and Pocket Features Creating Pads, Creating a Simple Pocket and Pocket Limits, Restrictions for Pad/ Pocket Profile, Sketches, Open Profiles.

Module 4: Assembly and Simulation

- Assembly Level Features, Create -An Assembly Split, Assembly Hole, Assembly Pocket, add a Body to an Assembly, Remove a Body from an Assembly

Coordinators

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Outcomes

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

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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SKILL LABS

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___5___ Semester Mechanical Engg. Students

DEPARTMENT OF

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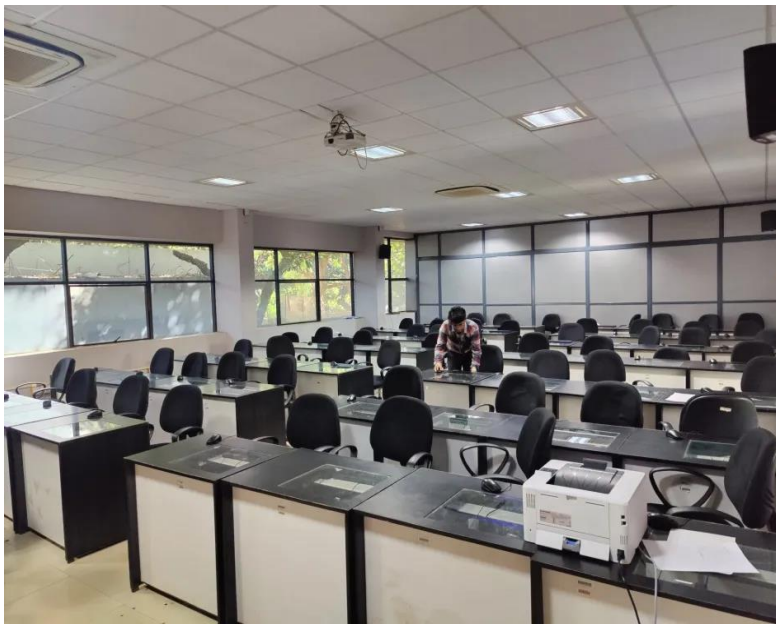

MATLAB FOR MECHANICAL ENGG.S

FOR

Students of 5TH Semester

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 Hours
Certification exam: 3 Hours

Module 1: MATLAB INTRODUCTION

Capabilities, System requirements, MATLAB work environment, operators, plotting commands, MATALB Graphics, Uses

1. **Arrays, vector, matrix, size**
2. **Multidimensional arrays**
3. **Matrix manipulations- Matrix creation, Basic functions**

Demonstration

Module 2: Variables

Special variables and constants, matrices and vectors, examples

1. **Arithmetic functions, Relational operators, Logical operations and functions**
2. **Matrix functions – transposing a matrix, Matrix inversion**
3. **Types of ERRORs in MATLAB programs**

Module 3: GRAPHICS IN MATLAB

GRAPHICS IN MATLAB

1. **Graphics in MATLAB -2D plots and 3-D Plots**
2. **Adding titles, axis labels and annotations**

Module 4: M/c Learning Apps.

MATLAB FOR MACHINE LEARNING APPLICATIONS (ML)

1. **Introduction to the applicability of MATLAB for AI & ML**
2. **Linear Regression Analysis : Theory + Demonstration**

Coordinators

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Outcomes

After completing MATLAB SKILL ENHANCEMENT COURSE, students will acquire following capabilities (few are listed here):

- ✓ Numeric computations
- ✓ Data Analysis and Visualization
- ✓ Programming and Algorithm Development
- ✓ Application Development and Deployment

Acceptance

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