

Level 1: Fundamentals

Mechanical Systems

The driving force behind most industrial applications is Mechanical Systems. Gears, drives, bearings, pulleys, and more are found in nearly everything that moves. The Mechanical Systems course covers the installation, use, maintenance, and troubleshooting of mechanical drive components and systems. The curriculum is divided into various topics which deal with the components encountered in industry. The learning is based on practical, hands-on tasks to build know-how in operating and maintaining these vital systems

Course Topics

- Introduction to mechanical drive systems
- Belt, chains, and gear drives
- Couplings and shaft alignment
- Bearings and linear bearings
- Gaskets, seals, ball screws, clutches, and brakes
- Laser alignment, lubrication, and vibration analysis

Core Competencies

- Machine safety
- Identification of the components of a mechanical system, including: belt drives, chain drives, gear drives, & couplings
- Important calculations: speed, torque, force & system efficiency
- Mechanical drawing
- Motors, keys, and soft foot alignment
- Belt drives, chain drives, alignment and couplings, lubrication
- Gear drives, bearings, gaskets and seals
- Clutches and brakes, ball screw and linear bearings

Equipment

Mechanical Training System

- Modular system to fit different training needs and budgets
- Heavy-duty equipment with industrial components
- Fully illustrated job sheets direct students to complete tasks safely and efficiently
- Lockout/tagout on the disconnecting switch and safety panels ensure student safety
- Working space can be increased by adding a slave base unit
- Universal base unit can be mounted on a regular table as well as optional benches
- Quality industrial components are mounted on panels for storage and inventory control
- Cost-effective solution with comprehensive curriculum
- Provides hands-on, safe mechanical training



The bench system will be utilized in level 2 as well.