



MECHANICAL CONCEPTS

Condensed Course Outline

PRECISION MEASUREMENTS

- ☐ Steel rules
- ☐ Micrometers
- ☐ Calipers
- ☐ Height & depth gauges
- ☐ Dial indicators
- ☐ Digital measuring tools
- ☐ Telescoping gauges

BEARINGS & SEALS

- ☐ Bearing types & design
- ☐ Ball & roller bearings
- ☐ Bearing installation
- ☐ Bearing maintenance
- ☐ Oil seals
- ☐ O-rings
- ☐ Mechanical seals
- ☐ Pump sealing

BELT & CHAIN DRIVES

- ☐ V-belts
- ☐ Sheaves & pulleys
- ☐ Belt replacement
- ☐ Belt tensioning
- ☐ Chain types
- ☐ Sprockets
- ☐ Chain replacement
- ☐ Drive maintenance

GEARS & GEAR DRIVES

- ☐ Gear types
- ☐ Open & enclosed drives
- ☐ Gear safety
- ☐ Drive configurations
- ☐ Preventive maintenance

SHAFT ALIGNMENT & COUPLINGS

- ☐ Types of misalignment
- ☐ Alignment methods
- ☐ Precision alignment
- ☐ Laser alignment
- ☐ Coupling types
- ☐ Coupling installation
- ☐ Preventive maintenance

PIPING & HOSES

- ☐ Pipe & tubing materials
- ☐ Fittings & connections
- ☐ Hose systems
- ☐ Maintenance & safety

PUMPS

- ☐ Centrifugal pumps
- ☐ Turbine & propeller pumps
- ☐ Rotary pumps
- ☐ Reciprocating pumps
- ☐ Metering pumps

PREVENTIVE MAINTENANCE

- ☐ PM planning
- ☐ Maintenance routes
- ☐ PdM concepts
- ☐ Program implementation

RIGGING & SAFETY

- ☐ Load calculation
- ☐ Slings & hardware
- ☐ Rigging methods
- ☐ Center of gravity
- ☐ Safe lifting practices