MECH 101

● ○ ○ Foundation 30 hours 2 modules · 14 lessons

Mechanical Safety, Fundamentals & Hydraulics

The maintenance trade, plant safety rules and the hydraulics every pump, valve and pipe decision rests on.

30	2	14	2,000	70	6
HOURS OF TRAINING	MODULES	LESSONS	STUDY CARDS	SCENARIOS	3D SIMULATORS

COURSE OBJECTIVES

By the end of this course you will be able to:

1. Apply lockout/tagout, confined-space entry, rigging and lifting rules to pump-station and process work.
2. Use pressure, head, flow, velocity and friction-loss relationships to explain how fluid systems behave.
3. Read pipe and instrument drawings, hydraulic grade lines and basic P&IDs.
4. Use mechanical fundamentals — torque, power, mechanical advantage, fasteners and gaskets — correctly.
5. Recognize water hammer and other transient hazards and how valve operation causes them.
6. Select and use hand and power tools, measurement instruments and lubricants safely.
7. Document work so the next person can trust it.

WHAT YOU WILL LEARN

Safety that saves lives
LOTO, wet-well atmospheres, permits, rigging angles and PPE.

Fluid mechanics for mechanics
Pascal’s law, head vs pressure, friction and the hydraulic grade line.

Machine fundamentals
Torque, power, gears, belts, fasteners and gasket selection.

Water hammer & surge
Why fast valve closure is dangerous and how to prevent it.

Tools & measurement
Gauges, feeler gauges, dial indicators and good measurement habits.

Maintenance documentation
Work orders, as-found/as-left records and handover.

MAJOR TOPICS COVERED

Module 1	Mechanical Safety, Standards & the Maintenance Trade	7 lessons
Module 2	Mechanical Fundamentals & Hydraulics for Maintenance	7 lessons

COURSE HIGHLIGHTS

- **30 hours** of structured, self-paced instruction with active-time tracking.
- **6 interactive 3D simulators** — rotate, explode and cut away real equipment, then change the controls and watch the numbers respond.
- **70 field scenarios** with background, decision points and worked answers.
- **2,000 study cards**, 14 printable checklists and hands-on calculators.
- **Module quizzes** and a completion certificate with a verification code.

WHO IT'S FOR

New maintenance mechanics, operators moving into maintenance and apprentices at water and wastewater plants.

BEFORE YOU START

None. Take this course first in the Mechanical track.

WHERE TO NEXT

MECH 102 — Pumps: Centrifugal, Positive Displacement & Metering

Start learning Create a free account at tryetech.com, open **Mechanical Maintenance** and begin with Module 1.