



# **ISTITUTO DI ISTRUZIONE SUPERIORE "Buonarroti – Volta"**

## **PROGRAMMA SVOLTO**

***ANNO SCOLASTICO 2025/2026***

**CLASSE 5<sup>A</sup>    SEZIONE D    TECNOLOGICO - MECCANICA E MECCATRONICA**

|                                        |                                  |
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| <b>DOCENTE</b><br><b>ROBERTO FANNI</b> | <b>MATERIA</b><br><b>INGLESE</b> |
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### **Libro di testo**

Di Rocchi M. / Ferrari C.

**I MECH** English for Mechanical Technology

Volume unico

Hoepli

### **UNIT 3 - Machine tools**

- ✓ Materials and their properties
  - What are machine tools?
  - The categories of machine tools
- ✓ Drilling, turning and milling machines
  - Working on a machine tool
  - Drilling machines
  - Turning machines
  - Milling machines

### **UNIT 4 - Metalworking processes**

- ✓ Metallurgy and steelmaking
  - What is metallurgy?
  - Steelmaking
- ✓ The basic methods of metalworking
  - New methods of metalworking
  - What is a mould?
  - Casting
- ✓ Forging, rolling and extrusion
  - What is forging?
  - What is rolling?
  - What is extrusion?
- ✓ Welding, soldering and brazing
  - What is welding?
  - What is soldering?
  - What is brazing?

### **UNIT 5 - Engines**

- ✓ Engines: the basics
  - Motor or engine?
  - Heat engines
  - Internal combustion engines
  - The main components of IC engines
- ✓ The four-stroke cycle
  - The four-stroke petrol engine

- ✓ The Diesel engine
  - The four-stroke Diesel engine
- ✓ The engine systems
  - Fuel
  - Oil
  - Cooling system
  - Battery
  - Exhaust

## **UNIT 6 - Heating and refrigeration systems**

- ✓ Heating systems
  - What are HVAC systems?
  - Heating systems: hot-water central heating
  - Heating systems: warm-air central heating
- ✓ Refrigeration systems
  - Refrigeration and air conditioning
  - Air conditioners
- ✓ Hydraulic machines: pumps
  - Pumps: the basics
  - Positive displacement pumps
  - Dynamic pumps

## **UNIT 7 - Electricity: basic principles**

- ✓ Electric circuits
  - Electricity: the basics
  - A simple electric circuit
  - Series and parallel circuits
- ✓ Electric motors
  - What is behind an electric motor?
  - What is inside a simple motor?
- ✓ Common motor configurations
  - DC motors
  - Stepper motors
  - AC motors
  - Linear motors
  - Servomotors
  - Universal motors

**Educazione Civica:**

Electric cars and sustainable development.

GUSPINI, 03/06/2026

IL DOCENTE

Prof. Roberto Fanni