

**I.T.I.S. "LEONARDO DA VINCI"**  
**PARMA**  
**PROGRAMMA DI LINGUA INGLESE**  
**Anno Scolastico 2024-2025**

**Classe:** 5C MECC

**Docente:** MARIA CINZIA DISTEFANO

**Libro di testo e sussidi didattici:**

M. Robba - L. Rua, *MechPower English for Mechanics, Mechatronics and Energy*, Edisco.

Mariagiovanna Andreolli, Pamela Linwood, *Grammar Reference, New Edition*, Petrini.

Ann Ross, *Invalsi Trainer B1/B2*, DEA Scuola

Schemi, tabelle, riassunti condivisi dalla docente su Classroom.

| <b>MODULI DISCIPLINARI DI MICROLINGUA E GRAMMATICA</b>                      |   |
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| <b>MODULO 1</b><br><b>Revision</b><br><b><i>PROPERTIES OF MATERIALS</i></b> | <ul style="list-style-type: none"><li>● Atoms and matter</li><li>● Mechanical properties of materials</li><li>● Thermal, electrical and chemical properties of materials</li><li>● Loads and stresses</li><li>● Lubricants</li><li>● Greases</li><li>● Coolants</li></ul>   |
| <b>MODULO 1</b><br><b><i>HISTORY OF MATERIALS AND MACHINES</i></b>          | <ul style="list-style-type: none"><li>● Origins of metalworking</li><li>● The first industrial revolution</li><li>● The second industrial revolution</li><li>● The British economic decline</li><li>● The steam engine</li><li>● The six simple machines: inclined plane, screw, and wedge</li><li>● The six simple machines: wheel and axle, pulley and lever</li></ul>                                      |
| <b>MODULO 2</b><br><b><i>WORKING IN DIGITAL</i></b>                         | <ul style="list-style-type: none"><li>● Technical support to industries</li><li>● PLC</li></ul> <b>DRAWING</b> <ul style="list-style-type: none"><li>● From manual drafting to engineering drawing</li><li>● Techniques of representation</li><li>● CAD and Types of CAD</li><li>● The Design Process in a Cad System</li></ul>   |
| <b>MODULO 3</b><br><b><i>MATERIALS</i></b>                                  | <b>METALS</b> <ul style="list-style-type: none"><li>● General characteristics of metals</li><li>● Ferrous metals</li><li>● Steel</li><li>● Thermal treatments</li><li>● Softening and hardening thermal treatments</li><li>● Non-ferrous metals</li></ul> <b>NON-METALS</b> <ul style="list-style-type: none"><li>● Plastics and polymers</li><li>● Thermoplastics</li><li>● Thermosetting plastics</li></ul> |

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| <b>MODULO 4</b><br><b><i>SHAPING AND JOINING MATERIALS</i></b> | <ul style="list-style-type: none"> <li>● Machine tools</li> <li>● Turning and milling</li> <li>● Drilling and grinding</li> </ul>  |
| <b>MODULO 5</b><br><b><i>MECHATRONICS</i></b>                  | <b>AUTOMATION</b> <ul style="list-style-type: none"> <li>● What is mechatronics? Definition and objectives</li> <li>● Automation processes</li> <li>● Sensors</li> <li>● Programmed commands in CNC systems</li> </ul> <b>ROBOTICS</b> <ul style="list-style-type: none"> <li>● What is a robot?</li> <li>● Robotic arms</li> <li>● Industrial robots</li> <li>● Why a robot?</li> </ul> <b>ENGINES</b> <ul style="list-style-type: none"> <li>● General characteristics</li> <li>● The four-stroke petrol engine</li> <li>● The two-stroke petrol engine</li> <li>● The four-stroke diesel engine</li> <li>● Fuel injection systems and turbochargers</li> <li>● The electric car</li> <li>● Alternative engines</li> </ul> |
| <b>MODULO 6</b><br><b><i>6 THINK GREEN</i></b>                 | <b>FUELS</b> <ul style="list-style-type: none"> <li>● What is energy?</li> <li>● Renewable and non-renewable energy sources</li> <li>● Fossil fuels</li> <li>● Petroleum derivatives</li> <li>● Biofuels</li> </ul> <b>ENERGY SOURCES</b> <ul style="list-style-type: none"> <li>● Energy production: primary and secondary sources</li> <li>● Thermoelectric power plants</li> <li>● Nuclear power plants</li> <li>● Hydroelectric power plants</li> <li>● Energy from the Sun</li> <li>● Wind and tides</li> <li>● Geothermal energy and biomass</li> </ul>  |

## MODULO DI DIDATTICA ORIENTATIVA

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| <b><i>THE WORLD OF WORK</i></b>  | <ul style="list-style-type: none"> <li>● The school-work experience (PCTO)</li> <li>● The Europass CV</li> <li>● Cover letters</li> <li>● Hard and soft skills</li> </ul> |
| <b>MODULO: GRAMMAR REVISION</b>  |   |
| <p>Revisione e approfondimento delle principali strutture grammaticali.<br/>         Per il consolidamento delle conoscenze morfo-sintattiche e delle funzioni comunicative, già oggetto di studio negli anni precedenti, sono state proposte tematiche legate all'attualità ed all'indirizzo di studi.<br/>         Esercizi di Reading and Listening sui modelli proposti per le prove INVALSI (primo e secondo periodo) dal libro di testo e dai siti: Hub Scuola Invalsi, Deascuola Invalsi, Zanichelli Invalsi.</p> |   |

## MODULO DISCIPLINARE DI EDUCAZIONE CIVICA

### ***A GREEN WORLD***

- Ecology
- Pollution
- Air pollution
- Water pollution
- The 3 R's: reduce, reuse and recycle
- Carbon Footprint

## MODULO DI CIVILTÀ

### ***MASS PRODUCTION AND FORDISM***

- Who invented the automobile?
- Mass Production: Frederick Taylor and Henry Ford
- Henry Ford's Way-Inflexibility in Design
- The Moving Assembly Line

### ***THE RISE AND FALL OF THE BERLIN WALL***

 The rise and fall of the Berlin Wall - Konrad H. Jarausch

Parma 31/05/2025