**CLASSE 5^MM2**

**PROGRAMMA DI INGLESE**

Anno Scolastico 2019/2020

**Testo:** - Rosa Anna Rizzo, SMARTMECH, Eli

* from Module 1 – Safety first

- The importance of safety; hazards and risks

- Personal Protective Equipment

- Safety education; fire safety plan; fire extinguishers; evacuation drills

- Safety signs: warning, prohibition, obligation (fotocopia)

- Ergonomics (reading comprehension)

* from Module 4 – Mechanical drawing

- Manual drafting; drawing tools

- Technical drawing: standardized conventions (types of lines, tolerances)

- Orthographic and perspective projections

- Computer aided design (CAD)

* from Module 5 – Machining operations

- Introduction to machine tools

- Parts of a lathe

- Turning, milling, drilling, boring, grinding, threading, tapping

- Planers and shapers; metal forming

- Unconventional machining processes: ultrasonic (USM), spark erosion (EDM), laser

* from Module 6 – Metal processes

- Casting

- Rolling, extrusion, drawing

- Powder forming (sintering)

- Welding

* from Module 7 – The motor vehicle

- Main parts of a car; driving rules

- Drive train

- internal combustion engine: general characteristics

- The four-stroke cycle

- The diesel engine

- Fuel injection

- Electrical, ignition, lubrication, exhaust and cooling systems

- Tyres; parking sensors

- Alternative engines: electric and hybrid cars

- Tesla electric truck: reading comprehension

- How Tesla is driving electric car innovation (fotocopia)

- Why little Norway leads the world in EV usage (article from Forbes)

- Fuel cell vehicles

* from Module 8 – Systems and automation

- Mechatronics and robotics

- Automated factory organization; FMS

- Numerical control and CNC

- Domotics (listening comprehension)

- Introduction to robots; parts of an industrial robot; robot applications (fotocopia)

- The dawn of industrial robotics: listening activity

- Drones

- Sensors

- Top 5 coolest robots (video from YouTube)

* How to write a CV and a cover letter
* Animal Farm, by George Orwell
* FCE format exercises

Como, 15/05/20

l'insegnante gli studenti

Anna Maria Frangi