

**ISTITUTO TECNICO TECNOLOGICO STATALE
"SILVANO FEDI – ENRICO FERMI"**

□ □

SCHEMA PROGETTO PTOF 21/22-PIANO ESTATE 2021

1. Denominazione progetto

S.T.R.E.A.M.

Students Together for Robotics & Engineering Arts for Mars

(Students Together for Robotics and Engineering Arts for Mars)

Science, Technology, Robotics, Engineering, Arts, Mathematics

2. Responsabile del progetto e coordinatore didattico

PRof. Riccardo Niccolai

3. Obiettivi

The didactic focus of the project is to work jointly in a virtual collaboration between American and Italian students, in the 2021-22 school year, with a high-school computer class of students aged 16-17. The ITALIAN class carries on the project in collaboration with the US class. The US class carries out the project in collaboration with the ITALIAN class.

3. Descrizione del progetto

The project plans to employ computational thinking, coding and educational robotics to introduce students to the remote control of a robot in reference to the MARS Perseverance mission.

The overall goal of the project is to strengthen cultural ties between the United States and Italy, by sharing a curricular educational program on technical disciplines that also allows a cultural exchange between students from both countries.

With this project we want to improve empowerment and well-being through STEM education and entrepreneurship and the study of American English.

The project will be realised during the next school year.

Start date of the project → september 1, 2021

End date of the project → august 31, 2022

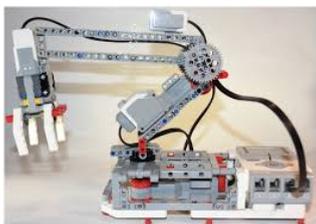
4. **Metodologia**

The specific aim of the project is to build strong robotics and Artificial Intelligence (AI) skills among the Italian and U.S. students. The students will be able to build a robotic arm with LEGO MINDSTORMS kits, manage the robot via remote control, build the Nasa Rover replica, and create simple Artificial Intelligence applications. Both student teams from the U.S. and Italy will simultaneously work on the project, collaborating remotely but in real time across the Atlantic.

In addition to the study of robotics with the use of educational robotics, the project includes a highly significant element of American culture and science as is the MARS Perseverance mission.

Italian scientists also collaborated on this mission: in fact, the Perseverance rover is equipped with imaging equipment and sensors made in France, Italy, Spain and Norway. "It is an exploratory mission, with elements provided by our European partners to seek evidence of the possibility of life beyond our planet and the mysteries of the universe," President Biden said at the Munich Security Conference on February 19, 2021.

Among the technologies that will help Perseverance search for signs of life and improve our understanding of Mars, is the Laser Retroreflector Array (LaRA), a handheld device with reflectors designed to enable laser tracking of equipment on the planet's surface, and to render more precise future landings. The device array was developed by Italian scientists from the National Institute of Nuclear Physics.



This project therefore envisages the connection between Italian and American experts, organizations and institutions in the specific field, and the promotion of a greater understanding of the policies and prospects of collaboration between the United States of America and Italy in the field of robotics applied to space exploration.

5. **Durata e periodo di svolgimento**

The project will be realised during the next school year.

Start date of the project → september 1, 2021

End date of the project → august 31, 2022

6. **Risorse umane**

Prof. Riccardo Niccolai (responsabile del progetto e coordinatore didattico)

Le risorse umane saranno individuate tra i docenti del dipartimento di informatica e/o di altri dipartimenti ed anche al bisogno tra i tutor di scienza ludica

Prof. Emanuel Luchetti

**ISTITUTO TECNICO TECNOLOGICO STATALE
"SILVANO FEDI – ENRICO FERMI"**

Prof. Daniele Bini
Prof. Angelo Vigliaturo
Prof. Eugenio Marino Merlo
Prof. Pasquale Silvestro
Prof.ssa Laura Pellegrini
Pros.ssa Laura Liotta
altri docenti del dipartimento

7. Valutazione

strumenti di valutazione previsti dal sistema gestione controllo qualità di ITTS FEDI-FERMI

8. Beni e servizi

LABORATORIO FABLAB - SEDE FERMI

9. Costi totali e risorse finanziarie

COSTI A CARICO DEL PROGETTO

E' stata avanzata richiesta di contributo all'Ambasciata degli Stati Uniti d'America a Roma

Pistoia, 9 maggio 2021 Il responsabile del progetto

RICCARDO NICCOLAI Firma



Riservato all'Ufficio:	Costi ammessi: