



SYLLABUS 2022 – 2023 7TH GRADE

ROBOTICS

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LIFE AHEAD METHODOLOGY

Personal growth is assured through the philosophical foundations, and the school's Life Ahead Methodology. The Life Ahead Methodology promotes autonomy, organization, responsibility, and social skills. Its major goal is to produce self-reliant individuals who will assume an ever-greater responsibility for their own learning.

COURSE DESCRIPTION

Within this Robotics Engineering course, students will develop a working knowledge of control systems and an understanding of the basic hardware and software required to navigate and manipulate a simple robot.

COURSE OBJECTIVES

- Stimulate the student logical thinking through programming.
- Handle programming tools for the construction of mobile robots.
- Investigate deeper about the main functions of sensors, actuators on Arduino programming.
- Discover the possibilities of robotic through articulate mechanisms.
- Develop simulated spaces where the student visualizes and experiment with articulate robots.
- Discover welding skills to create electronic circuits.
- Establish practices for the development of spatial vision in tridimensional environments.
- Learn fluently the management of tridimensional design software.

CONTENT

- **Mobile Robots**
 - Mobile robot programming.
 - Solve of mobile robot challenges.
 - Application of sensors and actuators with Arduino.

- **Articulate Robots**
 - Basic concepts of articulate robots.
 - Simulation of robots on virtual environments.
 - Welding of basic electronic components.
- **3D Design**
 - Spatial visualization and primitive figures.
 - Isometric views and plans.
 - Tridimensional design in 3D modeling software.

SKILLS STANDS

- Develop inventive skills through the discovering of new technologies.
- Use basic electronic components to make functional projects that helps to understand robotic.
- expand the ability to visualize tridimensional spaces through the creation of figures, shapes, and objects.

EXPECTATIONS

- Respect classmates and promote teamwork.
- Speak English
- Help foster a study and learning environment where everyone feels free to share their proposals and thoughts.
- Actively participate in class.
- Bring all materials needed for the classes.

ASSESSMENT

- | | |
|-----------------|-----|
| - Projects | 40% |
| - Classwork | 20% |
| - Homework | 10% |
| - Autonomy | 10% |
| - Creativity | 10% |
| - Participation | 10% |

APPOINTMENTS:

If you have any questions, you can request a meeting with the teacher by sending an email to iamaya@colegiomaya.edu.sv or calling 2316-7800.

For further information, we invite you to visit us at:



www.colegiomaya.edu.sv



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