

STEM & ROBOTICS JR. CLUB



SUMMARY

STEM & Robotics Jr. Club will start on January 14, 2019
The first project will be "Chess Project"; Chess is a gateway to STEM; it is considered a game of planning and strategy. The students will learn how to play chess:

- a. Demonstrate scorekeeping using the algebraic system of chess notation.
- b. Discuss the differences between the opening, the middle game, and the endgame.
- c. Explain four opening principles.
- d. Explain the four rules for castling.

Students will learn Chess Project coding using Python and Pygame; they will learn how to code classes in Python



SUMMARY

The second project will be "IoT" Internet of Things where students will learn: Visual Studio with C# to develop services.

Coding in C# will help developing the following skills:

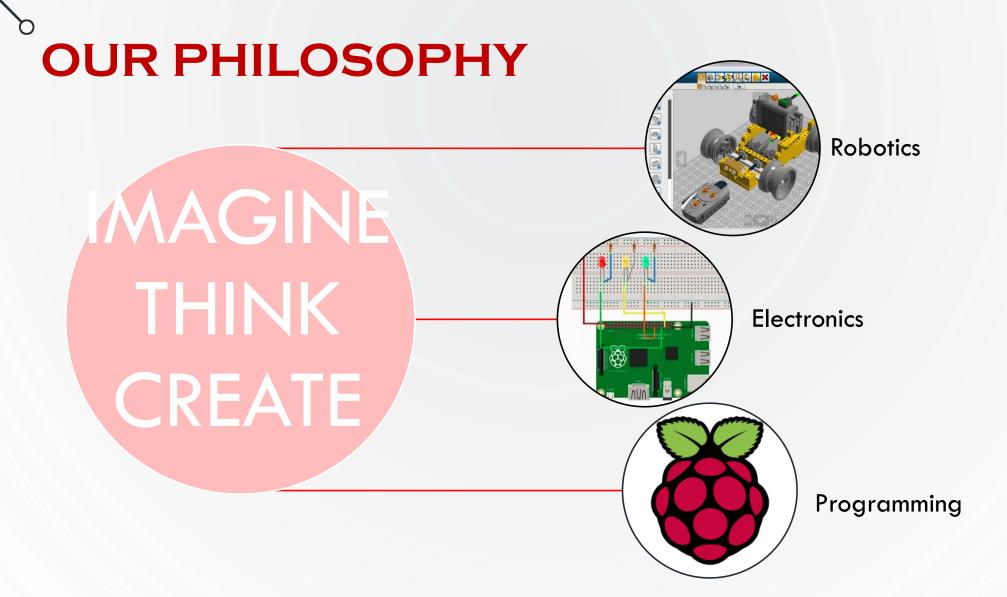
- Critical thinking skills
- Concentration skills
- Decision-making skills
- Memory
- Visualization

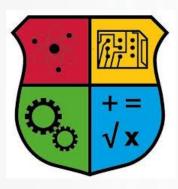
Students will learn how to use RPI (Raspberry PI)

- · RPI operating System
- GPIO (General Purpose Input Output)
- Intro to CV (Computer Vision)

Face recognition project with Windows 10 IoT



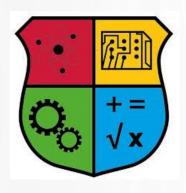






INTRO TO STEM & ROBOTICS CLUB

Let's review a typical month? Each month has 4 meetings of 90 minutes



Imagine, Think

Meeting 1:

Thought provoking, demos, videos. Why is important?

Meeting 2:

Narrow down topic, summarize research. Support students in their demos

Go to the library and read on topic.

Watch suggested videos

Visit suggested websites

Creative Process

Meeting 3:

Finalize research, use programming skills as a tool.
Support students

Work on your demo

Watch suggested videos

Visit suggested websites

Present

Meeting 4:

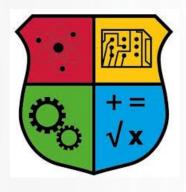
Rehearse with peers
Show your parents
what have been
learned.



STEM (SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS)

CLUB

<u>VISION</u>: The STEM & Robotics club will support students with problem solving and encourage research on STEM subjects.



GOALS:

- Students will use coding skills to develop a demo or game in the subject matter.
- Students will present to their parents at end of each project to develop presentation skills.
- Students will be given research material to encourage self learning based on flipped classroom concept.
- Parents will be encouraged to help students at home.



STEM & ROBOTICS JR. CLUB PROJECTS



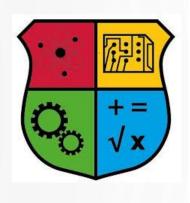
CHESS PROJECT JAN. 14 – AP. 1 2019



STEM & ROBOTICS JR.CLUB





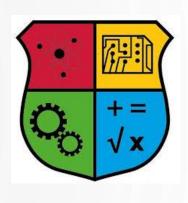




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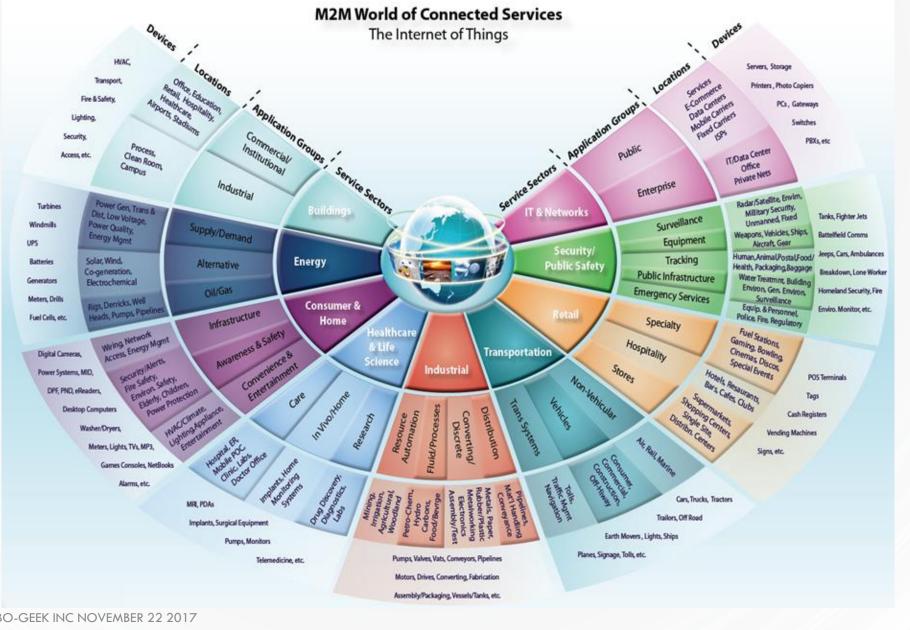






IOT PROJECT AP. 8 – JUNE 24 2019







IOT WINDOWS IOT CORE FOR RPI



MICROSOFT SERVICE FACE API

Getting Started with Face API in C# Tutorial

団 07/07/2017 • ① 13 minutes to read • Contributors 🌡 🔞

In this tutorial, you will create a WPF Windows application that uses the Face API. The application detects faces in an image, draws a frame around each face, and displays a description of the face on the status bar.

