

**Formation of The Digital Hub In IEM Malaysia**

by Ir. Tan Seng Khoon

Ir. Tan Seng Khoon is currently a committee member in Information And Communications Technology Special Interest Group (ICTSIG).

The government of Malaysia is concerned that the present school students are steering away from science subjects and more are moving towards career in arts. Studies have revealed that only 20% students choose to go into the science stream. Many science related courses in local universities find it hard to fill up. This trend, if not checked, will be detrimental to the future technical development of the country.

Therefore, the Ministry of Education Malaysia (MOE) and Malaysia Development Economic Corporation Sdn Bhd (MDEC) have jointly launched the education initiatives called STEM, the acronym for Science Technology Engineering Mathematics, so as to address the reducing number of students interested in science studies. IEM is in collaboration with MDEC to become the digital maker hub for Petaling Jaya.

As engineers, we have picked IEM to be the forefront in promoting the advancement of this science and technology to cultivate quality STEM activities for school students in the area of physical computing, software development and engineering design.

To begin, ICT Special Interest Group (ICTSG), has organized a series of Junior Digital Classes (Primary school students), in this end of the year period, for students to explore Microduino basics to build up their familiarity with the Microduino mCookie modules, sensors and trinkets. Microduino mCookie is Arduino-compatible open source electronic hardware for makers, designers, engineers, students and curious tinkerers of all ages. Microduino mCookie is powerful, small, LEGO®-compatible and also magnetically stackable. Students will learn the basics of circuitry, electronic controller, power source, mechanical sensor (switch), light sensor, sound sensor (microphone) and color LED trinket to construct energy efficient light prototypes. Students will try out different of sensors and trinkets configurations and operation parameters to modify the energy efficient light prototype for different types of real world application.

This project mover is headed by Ir. Amir Hussein Bin Jaafar and he is currently the Head of Design and Development Engineering of Eco Motive Sdn Bhd and technical Director for Micro Concept Tech Sdn Bhd. He has more than 16 years of experience in electronics hardware and embedded software development projects, and development and testing of advance powertrain and electronic control system for automotive application.

The course has started since 8th Nov and 10th Nov 2017, with 15 and 14 students, respectively. Time duration is from 8:30 am to 11:30 p.m and from 1:30 pm to 4:30 pm in C&S Room, Wisma IEM. The course will be repeated on 24th Nov 2017.

Syllabus

- i. *Introduction to IEM and IEM's role in promoting the Engineering profession.*
- ii. *Explanation on STEM education initiatives to school children and the digital hub formation in IEM.*
- iii. *To give an overview with lots of examples of STEM (Science Technology Engineering and Mathematics).*
- iv. *Prototyping of Arduino application using Microduino #1 –*
- v. *Exploring Microduino basics, circuitry, power supply, electronic components and to build up their familiarity with the Microduino modules.*
- vi. *Introducing various sensors, LED and trinkets and build energy efficient lighting control.*
- vii. *Introduction to software simple programming technique.*



Helping out the students



Students doing the project