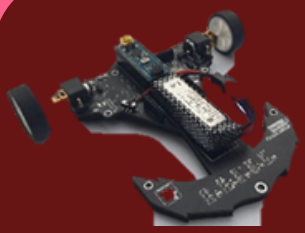
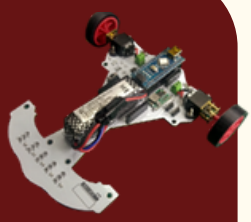
Organised By :
Information & Communications Technology Special Interest Group (ICTSIG),IEM

Let's have fun with robotic!

Half Day Junior Digital Class
Autonomous Robot Workshop #1





Date: 13th September 2025 (Saturday)
Time: 9:00 am to 1:00 pm

Venue: Maker Space Room, Ground Floor, Wisma IEM, PJ, Selangor
Speaker: Ir. Amir Hussein Bin Jaafar

Limited to 6 primary & secondary school students !

REGISTER NOW!

Free

Speaker: Ir. Amir Hussein Bin Jaafar

Remark !
Each students is **REQUIRED** to bring own laptop
Required electronic kit will be prepared (on loan) for each students

TIME	INTRODUCTION PROGRAMME
09.00 am - 10.00 am	• STEM education and STEM in Me programme • specific purpose robot: path finder robot • basics of Blockly or Scratch coding block or C/C++ language • Brief usage explanation on Blockly or Scratch blocks libraries or C/C++ language for path finding robot: robot prepare • Brief usage explanation on Blockly or Scratch blocks libraries or C/C++ language for obstacle avoider robot: start robot template Brief usage explanation on generic Blockly or Scratch programming blocks or C/C++ language: delay • Brief usage explanation on Blockly or Scratch blocks libraries or C/C++ language for path finding robot: while true stop • Introduction to LED output and respective output trinket coding
10.00 am - 11.00 am	• Explanation on path finding robot basic movement • Introduction to electric motor output trinket and respective output trinket coding: steer direction, stop • Introduction to electric motor output trinket and respective output trinket coding: tank turn • Configuration of path finder robot to pass through all possible type of off-line free movement
11.00 am - 12.00 pm	• Detail explanation on Blockly or Scratch blocks libraries or C/C++ language for path finder robot: line tracer time and turn at centre • Configuration of path finder robot to pass through all possible type of line with straight, wavy, time based and u-turn
12.00 pm - 01.00 pm	• Detail explanation on Blockly or Scratch blocks libraries or C/C++ language for path finder robot: path finder tank • Configuration of path finder robot to pass through all possible type of line with left, right and cross junction

Synopsis

To provide the necessary interest and skill in robotics and embedded coding, we often look at how students and robotics enthusiast can gather to learn, discover and compete using their robot creation is an open source electronics and district, state, national and international level competition.

In these competitions, the challenge is usually to construct a robot that can move on a given line with left, right and cross junction and pass through all designated checkpoints on a predefined track. This is an autonomous racer device, a pathfinder robot that can move smartly based on a black line or white line on the path with junctions.

In this course, coaches will explain about devices and their features that are built using electronic hardware and software coding that is suitable to compete in that said robotic challenge. Coaches will introduce to the participants specific purpose pathfinder robot, an Arduino-compatible open source electronic hardware developed suitable as a STEM education tools and for competing in defined challenges.

Next, participants will be introduced to software coding, coding control structure, algorithm and flow chart. Then, be introduced to Mixly and Blockly, a software coding language created suitable as a STEM education tools. Participant will learn the basics of Mixly abd Blockly for enhance control logics. In addition participants will discuss and learn the pathfinder robot specific functionality and strategy for the pathfinder robot to complete its task most effectively.

Finally, participants will start to configure, operate and test the pathfinder robot. Participants will be guided to troubleshoot and overcome any problem that they faced during this period. Once participants are accustomed with the pathfinder robot functionality and strategy and, basics, advance and libraries, as build-up to the highlight of the course, participants will start to configure and prepare the pathfinder robot themselves.

Biodata of Speaker

Ir. Amir Hussein Bin Jaafar graduated from University of Technology Petronas (UTP) with Bachelor Engineering (Electrical and Electronics) and from Universiti Teknologi Malaysia (UTM) with Master of Science (Real Time Software). He is registered as a Professional Engineer (Electronics) status with BEM since 2007. He has more than 23 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, and development of IoT and Artificial Intelligence applications. With the industry experience, he has been curating and conducting specialized green technology training to TVET trainers and also curating and conducting STEM courses for school students since 2016. He is currently the Technical Director for Micro Concept Tech Sdn Bhd.

Registration Form

HALF Days Junior Digital Class (SCHOOL HOLIDAY)

Let's get starting with electronics and coding

13th September 2025 (Saturday)| Wisma IEM

Organised by: **Information and Communications Technology Special Interest Group, IEM**

Name of participant : _____
Address: _____
Tel (Off./Res): _____
Mobile : _____
I/C No. of participant :
Date : _____
Signature: _____

Name of Member: _____
M'ship No : _____
Grade: _____
Address: _____
Tel (Off./Res): _____
Mobile : _____
Company's name: _____
I/C No. of participant :
Date : _____
Signature: _____

· Due to limited number of laptops in the IEM Maker Space, each student is REQUIRED to bring own laptop. However, do contact the secretariat if there are difficulties