

ROBOTICS -HEXAPOD



This Workshop is a practical approach targeted to improve the student's knowledge in kinematic motion in robotic movements based on various insect gaits, in particular say a cockroach's or a spider's gait, which can be demonstrated on a Hexapod – The Six Legged Robot.

The objective was to provide adequate information about gait movements, involved in ROBOTIC designs with which the learner will be able to initiate designing and develop his/her own models of Hexapods.

DESCRIPTION

This is a completely structured course with a smooth flow of information to gain expertise and therefore to gain appreciation on the following aspects:

1. Various Gaits of Insects
2. Kinematics and Kinaesthetic
3. Wireless and Wired Control
4. Accelerometers
5. Flex Sensors
6. Servo Motor control - PWM
7. DC Motor control – Drivers
8. Template Style coding
9. Basic Electronics
10. Switches and Joysticks



Please Visit apsis-solutions.com for the videos of Hexapod which would be worked upon during the workshop.

ADDITIONAL THEORY

The Course will concentrate on Embedded C coding for advanced design and programming methods, monitoring and control of the peripherals.

The Course will also have a session on "Industrial Kind of Coding Practices"

PLAT FORM

PIC16/18 (MPLAB IDE)



DURATION

3 Days (8 Hrs Per Day)

DELIVERY METHOD

Microchip-USA Certified Instructor driven, Programming in Embedded-C, Hands-On assignments on the Robotic kit.

COURSE TOPICS

Introduction to industrial robotics, Robotic arms, Microcontroller programming, Programming with internal peripherals, Interfacing and programming external peripherals – LEDs / switches, ADC, Motor, Sensors etc. Good Coding Style and Practices.

MATERIAL FOR THE PARTICIPANTS

1. Micro-controller Starter Kit (to be bought separately at subsidized rates)(Or 1 Kit FREE per team (5 Members). This kit does not require any separate programmer (inbuilt Programming capability).
2. CD containing all the slides, Programming Software, UART Terminal Controlling Apsis Proprietary executable and plenty of code examples.
3. All participants will receive two certificates
 - a. Special Numbered (traceable) Certificates Provided by Microchip USA and
 - b. Apsis Solutions.
4. Apsis Solution's Good Coding practices document.

OTHER CONTROLLER OPTIONS

The same workshop can also be conducted with the following processors:

1. ARM
2. 8051

