Embedded System and Robotics

Description

Robotics is the branch of mechanical engineering, electrical engineering, electronic engineering and computer science that deals with the design, construction, operation, and application of robots, as well as computer systems for their control, sensory feedback, and information processing. These technologies deal with automated machines that can take the place of humans in dangerous environments or manufacturing processes, or resemble humans in appearance, behavior, and/or cognition. Many of today's robots are inspired by nature contributing to the field of bio-inspired robotics.

Expectations and Goals

Arduino is an open source, computer hardware and software company, project, and user community that designs and manufactures microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world. The project's products are distributed as open-source hardware and software, which are licensed under the GNU Lesser General Public License (LGPL) or the GNU General Public License (GP). On the Design tab of the ribbon, check out the Themes, Colors, and Fonts galleries to preview options right in your document and then select one to apply you like.

Prerequisites

Basic C programming knowledge is mandatory

Course Schedule

Module	Topic
Module 1	Introduction of embedded systems Basic micro controller concept Embedded systems application AVR microcontroller concept Embedded C using basic microcontroller Atmega 16 microcontroller PIC Microcontroller pin diagram PIC vs Atmega Arduino programming and pin diagram
Module 2	Atmega16 digital pin control Atmega16 analog pin control PIC Microcontroller programming Sensor concept Microcontroller sensor interfacing
Module 3	Proteus circuit design LCD connection and programming Working with Motor Driver IC DC Motor, Servo interfacing
Module 4	Serial communication PWM control Relay concept
Module 5	Project work and documentation