

EMT2461 Course Project

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1. General Requirement

In the semester, a team of maximum three students needs to design, develop, build and demonstrate an instructor approved project based on a microcontroller board (Arduino is recommended). With the instructor's guidance and approval, each team chooses the title and objective of the course project.

Minimum requirement of the course project:

1. At least a DC motor and one type of sensor need to be used;
2. Need to generate a certain output from the system you build, such as physical motion (e.g, motor's motion), light(e.g., LED display, LCD display), sound (from a speaker or buzzer);
3. Wireless communication (Bluetooth, XBee or WiFi) need to be used.

2. Sample Projects

Here are some sample projects you can refer to:

Mobile visual surveillance robot
Motion Sensing LED cube
POV Display System
Car video recorder
Quadcopter
Obstacle avoiding mobile robot
Tape following mobile robot
Others: HUD, FPV, AirHOG, NAVI,

3. Websites of Sample Arduino Projects

Here are some websites you can find some sample Arduino projects. Take a look and get inspirations.

You can use them as reference. **But do NOT just copy them!**

- Youtube Arduino project videos: search in youtube
- Arduino Playground: <http://arduino.cc/playground/Projects/ArduinoUsers>
- Projects on Codeuino: <http://codeduino.com/projects/>
- Projects promoted on Make Magazine: makeprojects.com (or: <http://makezine.com/projects/>)
- *Arduino projects on Duino4projects.com:* <http://duino4projects.com/arduino-projects/>
- Top 40 Arduino Project on hack&mod:
<http://hacknmod.com/hack/top-40-arduino-projects-of-the-web/>
- Arduino Projects on bit-tech.com:
<http://www.bit-tech.net/modding/2010/09/02/arduino-projects-getting-started/5>
- *Projects on Instructables.com:*
<http://www.instructables.com/id/20-Unbelievable-Arduino-Projects/>

- Many more

Do more research online, you may get ideas or inspirations from other people's projects, and come up with your own project.

If you have any question about the project's target, or not clear what project to do, or not sure if your idea is achievable within a semester, please feel free to discuss with me at any time.

After your team decides the project, please inform me. I need to talk with each team to approve the chosen project.

3. Websites to Order Devices & Parts

See separate handout of "Websites for Shopping".