

Course Project:

The 555 timer can be used for a variety of circuits such as sensors, pulse generators, alarms, etc.

- The course project is open ended; this means that you have freedom in choosing your circuit, but it needs to have at least one 555timer.
- It is preferred to use the timer in junction with a sensor. Simply oscillating circuits are basic and not considered design.
- You cannot use digital components.
 - You can create your own digital gates from transistors.
- This project must be conceived in terms of a "product" that your team will design, with a set of overall objectives and especially with a set of minimum specifications which it must meet.
- Each team will then compete to design the best product (most elegant design, best performance, most closely meets specifications, most intuitively operated, lowest parts count and parts cost, etc.).
- You may want to take the design in steps: First decide on a general project in terms of what you may want your circuit to do.
- Perform a circuit analysis and confirm the result using LTspice. Your primary design should be submitted as your proposal by Mar. 28th. Your project needs approval before you can move on.
 - Provide enough information about your project; it will make the evaluation easier, and you get the approval faster. I will start by reading the reports that are clearer, and then get to the more unpleasant ones!
 - Your list of required parts should be included in the proposal.
 - Budget is limited to \$10 ordering new parts that are not in your kit.
- You have until Apr. 5th to complete your design.
 - Project is evaluated based on both your report and demonstration.
 - Circuit should be operational.
 - Start by transferring your LTspice simulation to breadboard, and when operational, you can transfer it to PCB. PCB is not required.
 - I do not want you to spend time on PCB and soldering. There are automated and very inexpensive services that you can use to fabricate your circuit. You can easily find one on the internet.
 - Budget for sending your circuit to external sources for fabrication is not granted by the department.
- Design idea can be from variety of sources, or you may come up with your own design. Make sure to properly cite and address your resource. If you are going for your own design, make sure to search and find out if anyone else had the same idea or not.

Some Project Ideas

- Motor PWM
- Reaction Timer Game
- 4 Way Traffic Lights
- Driving many LEDs
- 3x3x3 Cube

555 Timer

- Bike Turning Signal
- Police Lights
- Roulette
- Automatic Curtain Closer
- Burglar Alarm 4-Zone
- Clap on, clap off circuit