Below are **supplied to students** during their first lab, paid for with your lab fees. (See pages 2 and 3 for USB port requirements, either for your computer or for USB port expansion devices.)

- *Digilent* Analog Discovery (DAD) from https://digilent.com/
  - If you already have one (probably a DAD-2), you do not need to borrow one from ECE.
  - Students that borrow a DAD will get a DAD-3.
    - EE and CpE students will return during their last undergraduate semester in their BS degree program.
    - Other students will return before the end of the semester.
- DE10-Lite, from *http://www.terasic.com/*
  - All students will return at the end of the semester.

Below are parts that you will **need to purchase** or otherwise obtain on your own. A local company, OOTB Electronics and Robotics, can provide either all of the parts (OOTB 3701 Parts Kit) or some of the parts (***OOTB*** EEL 3701 Parts Only, without the breadboards and wire kit that some of you might already have). (A 30% smaller and a slightly **more** expensive breadboard and a wire kit are alternately available from Jameco, Jameco Part #: 20774 and Jameco Part #: 19290, and other places.) I strongly suggest that you buy the parts from ***OOTB***, but this is not required; if you do buy them from ***OOTB***, you can pick them up prior to our first lab **in our classroom during one of our classes**. Otherwise, you will have to go to the ***OOTB*** store at 4639 NW 6th St, Suite G. Breadboard (with at least two panels).

- 40-pin IDC cable (to connect DE10-Lite to the below breadboard breakout)
- DE10-lite breadboard breakout (connects IDC cable to breadboard)
- SPDT switch with breadboard breakout
- 2× 8 circuit SPST DIP switches for breadboard use
- 2× 10 circuit bar graph LEDs
- 2× DIP resistor packs 1 kΩ×8
- 2× SIP resistor packs 2.2 kΩ×8
- 2× 74HC00 ICs (NAND)
- 2× 74HC02 ICs (NOR)
- 2× Axial resistors 1 kΩ
- Large Breadboard (with at least two panels)
- Small Breadboard (with one full panel)
- Wire kit

The below parts are **optional**, i.e., **not** required, but might be helpful. If you have taken EEL3111C: *Circuits 1* you may already have this and the two above items.

- Digital Multimeter (Jameco Part #2318559 or Harbor Freight, a local company at 2520 North Main Street)

You **MUST** have and use your own laptop computer for this course with a dedicated camera and microphone. (A cell phone **cannot** be used as the camera.)

See the next two pages for USB port requirements, either for your computer or for USB port expansion devices.

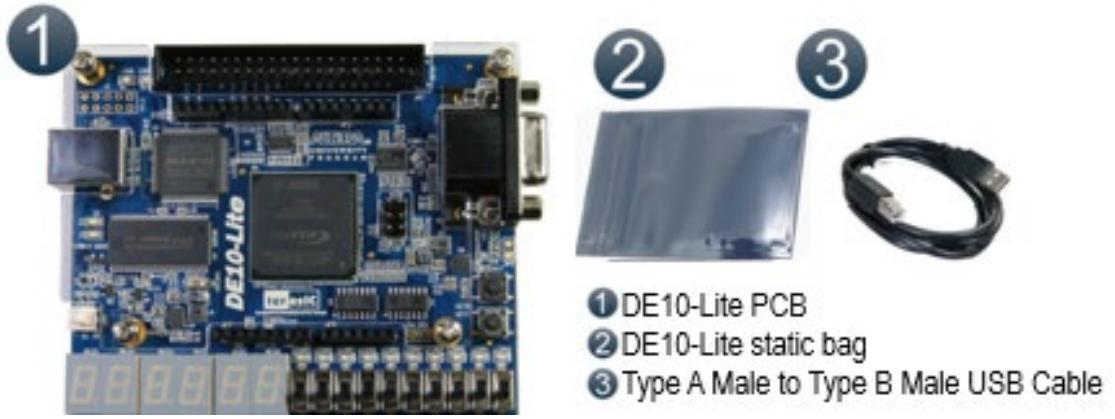
Your computer will need the necessary USB ports to connect to the DAD and DE10-lite. If it does not have the proper ports **than you will need to purchase a USB Port Expander or USB Converter cable(s)**.

- The DAD-3 requires a female USB C type port on the PC (with a female USB C type port on the DAD-3).
- The DAD-2 requires a female USB A type port on the PC (with a female USB B type port on the DAD-2).

Items provided with the DAD-3

Items provided with the DAD-2

The DE10-lite requires a female USB A type port on the PC (with a female USB B type port on the DE10).



Items provided with the DE10-lite

One solution, if you have a shortage or the wrong kind of USB ports, is to get a USB hub like one of those below.

Alternatively, if you have two USB C ports on your computer, you could get one of the below adapters for the DE10-lite (on the left) or you could get a new a USB C to USB A cable (on the right).

If you have two USB A ports on your computers, you could get one of the below left adapters for the DAD-3 or a new a USB A to USB B cable (below right).

If you are unsure, please bring your laptop to a PI during office hours and they will help you decide the best solution.