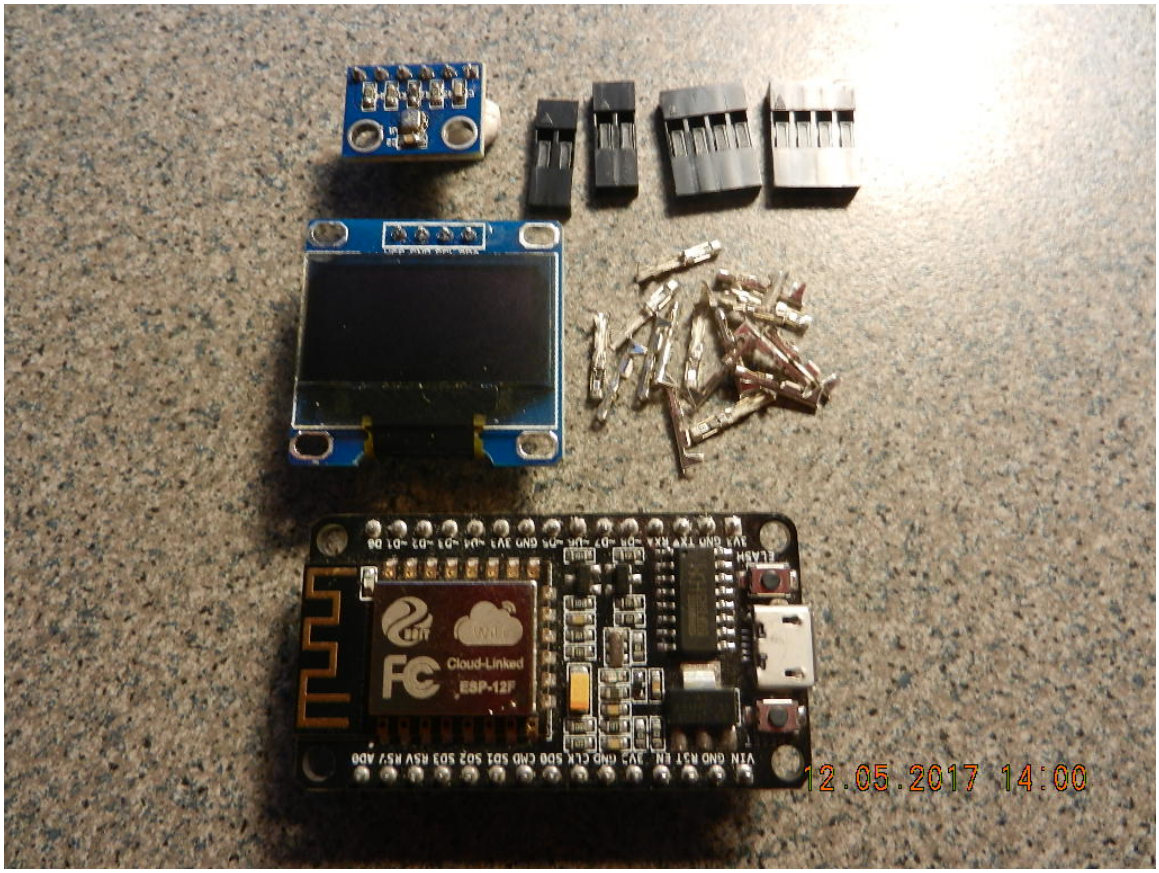
Weather Station BOM



1 – BME280 I2C Temperature, Humidity and Pressure sensor board
I bought mine on Ebay from China for around $1.25 with free shipping. Also available from Adafruit or Sparkfun

1 - .96”, 128x64, I2C OLED display using SSD1306 driver
I bought mine on Ebay from China for around $4.00. Mine is white. You can find blue and white with an area of yellow on top. Some are sold as SPI and I2C. You may have to move some resistors to select I2C operation. The important part is that it uses the SD1306 driver chip. Also available from Adafruit.

1 – NodeMCU ESP8266-12 with CH340
You can use any ESP8266-12 module that you want. I prefer the ones with the CH340 USB-to-Serial bridge. There was a rash of fake FTDI and SI bridge chips a few years ago so I no longer trust anything other than the CH340. I used a Witty Cloud ESP8266 board because of its small size. I modified the board by soldering a right angle header pin to a through hole to get access to 3.3V. The lower board of the two board set is not used once the upper board is programmed. You can use ant ESP8266-12 based board that you have. The boards are available from AliExpress, Adafruit, Sparkfun and many others.

2 – Dupont 4 pin, 0.1inch (2.54mm) pitch shells

1 – Dupont 2 pin, 0.1inch (2.54mm) pitch shells
2 – Dupont 1 pin, 0.1inch (2.54mm) pitch shells
12 – Dupont female crimps for 22-28awg wire
I get mine on Ebay. You can also use Molex or any brand that you prefer. Crimped pins or IDC The choice is yours. Be careful that you buy the correct pins for your shells. They are not mix and match. You can also just solder the wires to the boards and eliminate the connectors. If you use the crimped pins, you will need a crimper. Do not try to crimp with a pair of pliers. It does not work.

1 – 5V, 1A minimum wall power pack.
These are cheap and available on Ebay. Get one with a micro USB connector or whatever mates with your ESP8266 board.

You will also need eight pieces of 22-28awg wire to connect everything together. Or you can just wire it all to a piece of perf board. It is up to you. I found that when I use 28awg wire with the crimp pins that they tend to fall off. What I do to prevent this is to strip the end of the wire twice as long as normal. Twist the exposed wires together. Then fold the twisted wire over to double the thickness. Now when I crimp it the wire is thick enough to hold tightly.

After trying many brands of Crimpers, I found that the Japanese Engineer PA-21 or PA-09 works best for the Dupont male and female crimps. It is available on Ebay or Amazon. Either will work for the Dupont pins. The PA-09 will also do the pins for the JST connectors commonly used on LiPo batteries. Here is a link to a video on how to use the crimpers with Dupont pins and shells;
https://www.youtube.com/watch?v=H7CqdaTsoA0.


CONNECTOR PLIERS
PA-21
MADE IN JAPAN
MADE IN JAPAN
Size mm
1.6 1.9 2.2 2.5
ENGINEER PA-21
11.03.2017 13:30

Instructables recently had instructions on using the Weierli Tools SN-28B crimpers with Dupont pins and shells. You can view it here; https://www.instructables.com/id/Make-a-Good-Dupont-Pin-Crimp-EVERY-TIME/?utm_source=newsletter&utm_medium=email