

## WVHS Oct-Dec 2024 Classes

**FULL NEW!! Oct 6th: NanoVNA 101** -- The objective of this class is to familiarize the participant with the basic functions of the Nano Vector Network Analyzer (NanoVNA). Some of the topics include navigating the VNA menu, calibration, setting the measurement range and setting up sweeps to perform reflective (S11) and thru S21 Tests. Knowledge of these VNA functions will allow the user to make basic measurements such as Standing Wave Ratio (SWR), Return Loss in dB's, Line Loss in Coax, Length of Coax, Frequency Range of an Antenna and Resonant Frequency. If you have a NanoVNA, please bring it! **3-hour class**

**FULL NEW!! WVARC Only! Oct 7<sup>th</sup> CLASS: Bandpass Filter Kit Build** -- This session is reserved for members of the West Valley Amateur Radio Club (<https://westvalleyarc.com/>).

A band-pass filter or bandpass filter (BPF) is a device that passes frequencies within a certain range and rejects (attenuates) frequencies outside that range. These filters have the benefit of lowering the noise floor; improving single-band weak signal reception and out of band suppression to reduce harmonics on adjacent bands. They are a necessity for contest and Field Day operations where operators are frequently in close proximity to one another.

The kits include all parts to construct a working filter for the HF band that you select. The kits are just over \$50.00. Specifications are: Insertion: Typical, 0.5-.7db, Rejection: Typical, >30db band-to-band, Power Handling: 100W pep Impedance (ohms): 50.

In addition to a short demo lecture, the student will drill, install PL-259 connectors, wind toroids and solder components to the printed circuit board. An LCR meter will be used to accurately set the inductance of the wound toroid, a NanoVNA will then be used to sweep the filter and set the pass frequency, and finally, an SWR meter will be used to set the SWR of. The filter In addition to taking a working bandpass filter home, the build is educational and teaches the basics of capacitance, inductance and resonance and allows the participant to align their just-built filter.

Recommended prerequisites for this class are soldering and NanoVNA 101. (Limit 6 students per class). Method: Lecture/Lab.

*Note: After you register for class, Rusty KJ6AMR will contact you to purchase your kit. He will arrange a bulk purchase, so we get the best price.*

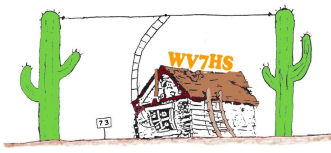
**NEW!! Oct 14th: Raspberry Pi** – The Raspberry Pi class is an introduction to the Pi. We cover general information and general uses for the Pi. Recommended components (hardware and software) are discussed. Some Ham-related applications are detailed. After the general coverage we set up a new RPi and install some software applications.

**NEW!! Oct 21st: What is GMRS & Why You Should Use It** – Learn about the fast-growing General Mobile Radio Service, a segment of the UHF band. Frank K7SD/WRVG584 explains licensing procedures, practical uses, and gives a lay of the land for GMRS in Phoenix, and beyond. See why GMRS is a must for your radio toolbox!

**Oct 28th: Soldering** – Learn by "hands on" use of soldering iron with point-to-point and circuit board soldering practice, a basic class for beginners. Loaner soldering irons are supplied to use during the class. (Limit 6 students per class)

*Our classes are typically limited to 10 students, are free, and open to the public (you do not need to be a member). Lab-based classes have a lower participant limit and may have a material fee. Classes can fill up quickly, but we will put you on a waiting list. We use the waiting list as a gauge of interest to determine which classes to schedule.*

16 Aug 2024



## WVHS Oct-Dec 2024 Classes

---

**Nov 4<sup>th</sup> NOON: General Class Circuit Components (G6)** – This class covers Sub-element G6 (24 pool questions). Two of the questions will appear on the 35-question General Test. Topics include resistors, capacitors, and inductors; rectifiers; solid-state diodes and transistors; vacuum tubes; batteries; analog and digital integrated circuits (IC's); Microwave ICs (MMICs); display devices; RF connectors; ferrite cores. Some math required.

**WVARC Only! Nov 11<sup>th</sup> NOON CLASS: Bandpass Filter Kit Build** -- This session is reserved for members of the West Valley Amateur Radio Club (<https://westvalleyarc.com/>).

A band-pass filter or bandpass filter (BPF) is a device that passes frequencies within a certain range and rejects (attenuates) frequencies outside that range. These filters have the benefit of lowering the noise floor; improving single-band weak signal reception and out of band suppression to reduce harmonics on adjacent bands. They are a necessity for contest and Field Day operations where operators are frequently in close proximity to one another.

The kits include all parts to construct a working filter for the HF band that you select. The kits are just over \$50.00. Specifications are: Insertion: Typical, 0.5-.7db, Rejection: Typical, >30db band-to-band, Power Handling: 100W pep Impedance (ohms): 50.

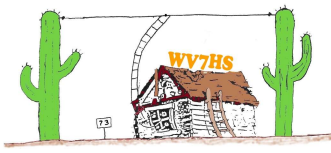
In addition to a short demo lecture, the student will drill, install PL-259 connectors, wind toroids and solder components to the printed circuit board. An LCR meter will be used to accurately set the inductance of the wound toroid, a NanoVNA will then be used to sweep the filter and set the pass frequency, and finally, an SWR meter will be used to set the SWR of. The filter In addition to taking a working bandpass filter home, the build is educational and teaches the basics of capacitance, inductance and resonance and allows the participant to align their just-built filter.

Recommended prerequisites for this class are soldering and NanoVNA 101. (Limit 6 students per class). Method: Lecture/Lab.

*Note: After you register for class, Rusty KJ6AMR will contact you to purchase your kit. He will arrange a bulk purchase, so we get the best price.*

**Nov 18<sup>th</sup> NOON: Basic FT-8** – This class covers the basics of the FT-8 digital mode, including what it is and isn't, why you would want to use it, hardware and software installation. Consider taking the Advanced FT-8 class to continue your learning!

**Nov 25<sup>th</sup> NOON: Advanced FT-8** – Learn the finer points of chasing and working DX stations and DXpeditions using the FT-8 mode. We'll also cover the new "Super Fox" version. A follow on class to our 'Basic FT-8' class for more experienced users.



## WVHS Oct-Dec 2024 Classes

---

**Dec 2<sup>nd</sup> NOON: Introduction to Kit Building**– Assemble and solder a working electronic kit. Learn to identify components and observe polarity. Recommend you first attend our Soldering class. This class has a **materials cost of \$15 payable at class**. Loaner soldering irons supplied to use during class. Limited to 5 students per class

**Dec 9<sup>th</sup> NOON: NanoVNA 101** -- The objective of this class is to familiarize the participant with the basic functions of the Nano Vector Network Analyzer (NanoVNA). Some of the topics include navigating the VNA menu, calibration, setting the measurement range and setting up sweeps to perform reflective (S11) and thru S21 Tests. Knowledge of these VNA functions will allow the user to make basic measurements such as Standing Wave Ratio (SWR), Return Loss in dB's, Line Loss in Coax, Length of Coax, Frequency Range of an Antenna and Resonant Frequency. If you have a NanoVNA, please bring it! **3-hour class**

**Dec 16<sup>th</sup> NOON: Advanced Kit Building**– Use the skills you have already acquired in Kit Building to build a working FM radio. Test and trouble shoot. Student is responsible **for purchasing kit prior to class**. Order the kit “Elenco FM Radio Kit” from amazon: <https://a.co/d/bFVMGY8> (<\$20). Loaner soldering irons are supplied for use during class. Limited to 5 students per class.