

Alachua ARES & Santa Fe College Amateur Radio Club Tech Course

by Gordon Gibby KX4Z



Students & Instructors with newly-created 2-meter antennas



Jeff Capehart W4UFL running a segment of instructional video.



One of three tables full of gear for a distinctly hands-on Technician course. BitX40 transceiver in a plywood open housing just to the left of the laptop computer. It fascinated the students. We opened the antenna tuner so components and adjustments were more obvious. Homemade desk mic constructed using 1" dowel rod.

Filling almost the entire Nov 4/5th weekend, Alachua ARES and the SFC Amateur Radio Club teamed up to hold an “immersion” Technician unique license class that went a total of 16 hours. There were five students, a couple of whom already had their license but still enjoyed the event, and an additional UF faculty member audited some of the course.

Santa Fe ham club President **Philip Papendick W0PAP** arranged a spacious amphitheater classroom complete with A/V facilities and easy access to antenna-ready trees outside a back door. Faculty adviser and ARES member **Art Grant KM4YGH** and **Cindy Grant KM4YGG** joined in taking care of minute-by-minute details, helping **Nancy Gibby KM4YGI** with meals --- sequential calls signs because all three got their licenses from a previous Immersion Course! Alachua ARES President **Jeff Capehart W4UFL** took a stint at teaching along with Art so the students got some breaks from me.

We advertise this as an extensively “hands-on” course. It attracts people who really want to understand radio. Not only did we get through almost every question in the database (using Ham Whisperer youTube videos) but students touched a vast array of ham radio: as the very first exercise, they put up the ladder-line-fed random length HF dipole antenna, then listened to VHF repeaters, HF SSB morning voice net, PSK, RTTY, Olivia, CW, packet---any signal possible. Labs had them measuring voltages (AC & DC), computing and measuring resistor circuit currents, including series resistors. Between videos they watched WINLINK email transfer, packet radio connections and measured SWR multiple ways. A high school student successfully adjusted a kilowatt-sized manual T-antenna tuner at least twice his age. The BitX40 transceiver was an instant “hit” and students were

asking how to get that incredible circuit board! KE0OG's fine online videos were also used. (<http://www.qsl.net/nf4rc/CourseMasterVideoTimeDemoList.pdf>)

Antenna building on Sunday is the high point of the course, teaching coax connections, PL259-SO239-SMA conversions, coax stripping, wire preparation and soldering. Hands-on skills are vital for new hams – so they cut their own 14-gauge wire, shaped it into an end-fed stub-tuned SlimJim secured on pressure treated 1x2 with electrical tape, then slid alligator test clips up and down while watching the all-important SWR dip on an MFJ Antenna Analyzer. Every antenna tuned up well! Then they soldered and finished up an EMP-hardened, outdoor-capable antenna! We also built the lamp-cord 2-meter antenna, students creating a working antenna in under 5 minutes, complete with feedline.

A growing percentage of our local ARES group is home-grown through just these courses; several have made it now all the way through EXTRA. This weekend, using an HF go-box from our *Steinhatchee Storm* exercise, we set up a WINLINK gateway (server) and watched as the BitX40 accessed it using a Signalink on 40 meters. To get them on the air right after their license, participants can purchase a Baofeng UV5 transceiver at cost, pre-programmed with 50-70 useful frequencies.

By the end of Sunday, our students were elated at the enormous amount of regulations, radio theory, modulation, electronics, ham procedures, propagation, and antenna/feedline knowledge they had gained in just one weekend!