Some of these tools are time savers, but not required. (Oscillating tool instead of sandpaper for example – you must have one or the other as a minimum). Appropriate tools for your geographic location may be substituted in your course approval listing rather than the described North American SUGGESTED listing.

Classroom suggested items:
1. Support and resource materials (videos, catalogs, spec sheets, additional books)
2. Slide or video presentation(s)
3. Calculators
4. Internet access
5. Copy of the NEC® Handbook (recommended)
6. White board/poster board with markers

Consumables
1. AWG wire and stranded wire (e.g. #10 bare, black, white) as needed
2. Wire connectors and grounding connectors (including screws, nuts/bolts, crimpers)
3. 12-volt switch(es)
4. 12-volt fuse(s)
5. 12-volt disconnect(s) (DC)
6. Half (½”) inch PVC conduit and connectors
7. Clear all-weather sealant
8. Concrete, rebar, masonry mortar as needed for tower type
9. Anchors, bolts, nuts, washers, base plate as needed for tower type
10. Fittings, bolts, nuts, washers, turnbuckles, clamps, guy wires as needed for tower type

Equipment
1. Personal Protection Equipment (Hard Hat, Safety Gloves, Safety Goggles, Harness, Laynard)
2. Small DC Wind Turbine
3. Table-top mast for wind-turbine
4. 30 foot tilt—up tower with guy wires and anchors
5. Tower sections with guy wires, rigging and anchors as needed (if not using tilt-up)
6. Mounting clamps
7. PVC conduit pipe
8. 12-volt deep cycle batteries (minimum of 4)
9. Combiner box (with breakers) or NEMA 3R rated junction box
10. Stop-Run Switch
11. Diverted Load
12. Load Diversion Charge Controller
13. AC disconnect
14. DC disconnect
15. Service panel box
16. Inverter
17. Two copper grounding electrodes
18. Micro-inverters (optional)
19. Power Optimizer (optional)
20. Charge Controller (optional)
21. Shovels and rakes
Tools
1 Volt-Ohm meter(s) / multimeter
2 Kill-A-Watt meter (optional)
3 Wind Meter and/or Anemometer
4 Load element (e.g. light bulb, LED, small motor–visually verify system connections)
5 Wire strippers, crimpers (tool & connectors), cutters
6 Screw drivers: Philips and flat-head, different lengths
7 Variable speed drill(s) with various drill bits and driver bits
8 Socket set(s)
9 Pliers: standard, needle-nose, locking, pipe
10 Assorted open end wrenches and pipe wrench
11 Hammers: claw or framing, ball peen, rubber mallet
12 Cutting tools: hack-saw or reciprocating saw,
13 Sanding tools: oscillating or sander tools, sandpaper, files
14 Fiberglass ladder (appropriately rated for weight; Extension and/or Step as needed)
15 Compass (or smart phone with compass app)
16 Fish tape (optional)
17 Stud finder with electrical wiring/cable and pipe alerts (optional)
18 Permanent marking pens
19 Measuring tape or Surveyors tape (30-100 feet/meters)
20 Metal ruler (foot, yard or meter)
21 Small level or laser level
22 Rope (length as needed)