

The Tactical Communications and Field Electronics Course provides students with an overall understanding of basic communications electronics and field repair as well as modification of communications systems; power computations; troubleshooting procedures; wiring and cable construction; and techniques for field expedient antenna design and fabrication. Students leave the course with a very good overall knowledge of the equipment and the proper expertise needed to construct field antennas, repair cables and connectors, and modify power supplies to operate in an austere field environment.

1. Objective: Learn the fundamentals of basic field electronics and apply them to tactical communications; incorporate the design, construction and implementation of field expedient antennas into difficult communications environments using commercially available components and test equipment.
2. Lesson Assessment: Daily classroom instruction, hands-on assessments & practical exercises are given to demonstrate a mastery of that day's objective. Each day of class includes hands-on demonstrations by the instructor. When the instructor is confident that the objective of the demonstration is understood, the class conducts practical exercises to test their comprehension of the task. These practical exercises include basic bench & field soldering, multimeter use, constructing power supplies, field expedient antenna design, and vehicle rigging for communications reliability. The instructor also insures that the class understands key terminology, as it is used repeatedly in the classroom and during the practical exercises.
3. Prerequisites: Students of the Tactical Communications and Field Electronics Course need to have no specific knowledge in order to attend the course. Experience operating Army fielded HF, VHF, and UHF radios is helpful, but not necessary to attend or complete the course. **Enrollment is restricted to individuals who are employed as law enforcement agents, investigators, or officers; members of the U.S. military; non-contract employees of the Department of Defense, Department of Homeland Security, and U.S. intelligence agencies.** Students need a willingness to learn and an attitude that fosters a good learning environment for all parties involved.
4. Materials: Students need note taking materials and cell phones. As the majority of learning is dependent upon having the necessary materials TSE, Inc. will provide the following equipment: connectors, tools, student practical exercise supplies & sites. **In the event the students want to train on their unit specific equipment, the students will need to bring that equipment to the course, to include a military vehicle(s) for use during the practical exercise phase.**
5. Instruction: The instruction given by TSE, Inc. is paramount to the student's successful understanding of the course objectives. A power point presentation is used as a teaching and lecture tool. This presentation progresses in a logical manner starting with an overview of basic electronic theory and terminology. Next the presentation familiarize the students with common equipment used, power computations, radio wave propagation and antenna design, and examples for vehicle rigging. Finally the instruction flows to instructor guided demonstrations & individual practical exercises.



6. Student activities: Student activities are geared toward a 5-day block of instruction.

Day 1: Focus is on electrical flow, current and power calculations, electrical components and soldering techniques. The day finishes with a series of soldering practical exercises.

Day 2: Commences with instruction in RF cable fabrication and termination using various RF connectors including BNC, N-type, TNC, and 6-pin Audio Connector (GC329G2)

Day 3: Begins with basic radio wave propagation and theory of antenna design and construction.

Day 4: Progresses to field expedient antenna construction techniques. Students are required to construct a variety of antennas for HF, VHF, UHF communications and test their antennas in the local environment.

Day 5: The final day consists of finishing all of the student made antennas and continuing to test test in the local environment, as well as a familiarization of vehicle rigging techniques with emphasis on rigging for high reliability of communications. The last day ends with a week overview and question and answer session. Each day's tasks demonstrate that the students have learned all the objectives of the course so far.



7. Contact Tactical Support Equipment, Inc. for pricing and availability. **TSE, Inc. must have a minimum number of students in order to conduct the course.**
8. Contact: For questions concerning registration, training, and location please contact the Director of Training, Mark Conneay at (910) 425-7232 or 3360, or via email at training@tserecon.com.