

REAL STEM INSTRUCTION THAT WILL RESULT IN REAL STUDENT LEARNING!



Make the connections between the engineering and technology applications of science and math concepts. At the Teachers Institute, teachers have the opportunity to explore and experience firsthand:

- Wireless technology basics and the foundations of radio science
- Techniques to instruct the basic electronics of radio
- Concepts integral to microcontrollers
- Satellite communications and telemetry data
- Sensor technology
- Data gathering and analysis



Multiple sessions are offered every summer. For an application and more information about the Teachers Institute, please visit www.arrl.org/TI

Learn more about what teachers are doing in their classrooms with Amateur Radio and wireless technology topics at: www.arrl.org/amateur-radio-in-the-classroom

Please direct questions to:
ARRL Education & Learning Department
EAD@arrl.org or 860-594-0367

SPONSORED BY

The ARRL Education & Technology Program funded by donors to the Education & Technology Fund at



The National Association for
ARRL Amateur Radio

225 Main Street, Newington, CT 06111
1-888-277-5289 (US) | membership@arrl.org



WIRELESS TECHNOLOGY

ARRL's Teachers Institute on Wireless Technology

Building Wireless Technology Literacy

Explore wireless technology for your classroom and expand your horizons with a hands-on professional development experience!

- Electronics
- Amateur Radio
- Space Communications
- Microcontroller Programming
- Sensor Technology
- and more!



The National Association for
ARRL Amateur Radio

Cost

Tuition, resources and most expenses to attend are paid by donations to the ARRL Education and Technology Program (ETP) Fund. Travel (up to \$600) and lodging expenses are reimbursed, and a per diem for meals is provided. To qualify for full expense reimbursement, participants must complete all Institute activities. A \$100 enrollment fee is required with the application. (Enrollment fees will be refunded to applicants who are not selected.)

The Teachers Institute is supported through generous contributions to the ARRL Education & Technology Fund by individuals and Amateur Radio clubs, with additional in-kind support from equipment vendors.

Donations fund tuition, resources, and expenses of the Teachers Institute, as well as equipment grants to schools for Amateur Radio stations. Support the program with a donation at www.arrl.org/etp.



APPLICANT ELIGIBILITY

- Teachers active in school, college, or professional educational organizations serving grade levels 4-12+, or those leading school-affiliated enrichment programs.
- An Amateur Radio license is NOT required to attend the introductory TI-1 session, but is required for the TI-2 session.
- Completion of the TI-1 program and an active ARRL membership are required to participate in the TI-2 program.

TI-1 Wireless Technology

The Teachers Institute (TI-1) is a 5-day professional development workshop filled with lectures, hands-on activities, demonstrations, circuit building, programming, and exploration in Amateur Radio.

Teachers will receive tools and strategies to introduce basic electronics, radio science, satellite communication, Amateur Radio, microcontrollers and electronic sensors to their students. Participants take home a selection of ARRL reference books as well as demonstration and activity tools and materials.

Three sessions of the TI-1 workshop are offered to qualified applicants. Enrollment for each TI-1 session is limited to 12 participants* to maximize participation and individual attention.



Refer to www.arrl.org/ti for an agenda and to download an application.

*Class size may be reduced in compliance with public health guidelines and regulations.



TI-2 REMOTE SENSING AND DATA GATHERING

This advanced Institute focuses on the basic electronics of sensors (temperature, pressure, position, humidity, etc.), converting analog sensor data to digital format, programming the microcontroller to read and interpret the data, and using radio to send the sensor data to the user. After learning the basics of remote sensing, teachers assemble a sensor package (weather station, buoy, etc.) to collect environmental data remotely. The TI-2 includes demonstrations of gathering telemetry data from amateur satellites and a discussion of applications of remote sensing data to math and science topics. TI-2 participants will build upon programming lessons provided in the TI-1 introductory workshop as they configure their new hardware. Enrollment for the TI-2 session is limited to 8 participants* to maximize participation and individual attention.