

ARRL

Amateur Radio Education and Technology

Unit 13. Introduction to Ham Radio (where you can start)

Up to this point in the curriculum, the focus has been on achieving literacy in wireless technology and the use of wireless technology (which includes Amateur Radio) to facilitate student achievement in all areas of the school's curriculum. Hopefully the students' interest in becoming a ham operator has been stimulated and they desire to take the next step beyond the school and classroom activities and join the group of life long learners who pursue ham radio as a hobby. Or, the teacher may have elected to go right to this point because the goal of his/her program is student enrichment activities.

The premier resource that many teachers and students choose to help instruct and learn the material needed to pass the FCC examination is the American Radio Relay League's (ARRL) *Now You're Talking* (NYT). This resource has been cited throughout this curriculum. It is an excellent and comprehensive resource, however it has some limitations that the schoolteachers and students should consider and compensate for. First, the text is organized around the content of the FCC examination and this organizational schema does not necessarily present a logical sequence for learning the content. Secondly, the text does not attempt to put wireless technology within the context of human communication, which is a concept that is fundamental to making the content relevant to many students.

The following is a recommended scope and sequence for a dedicated class that prepares the student to take the exam for the FCC Technician Amateur Radio license. This course is intended to be completed in 8 class days, two instructional hours per class day. Outside study and reading is assumed. Also hands-on demonstrations and activities must be an integral part of the curriculum not only for student success in learning and passing the examination but also for student enjoyment and modeling or mentoring the practical aspects of setting up and operating an Amateur Radio station by experienced operators.

Instructional Day	Unit description	TPB Curriculum Unit	NYT pages numbers.
Day 1	Wireless Technology in Today's World	Unit 1, 2, 3	
	Why Become a Ham Radio Operator?		vii – viii, 1.3-1.5
	Why is wireless technology an extension of human communication?	Unit 4	

Day 2	Basic Electricity. The vocabulary of electronics and relationships between component parts of electronics (Volts, amps, resistance, power, ohms law, DC/AC)	Unit 8	2.2-2.4, 7.4-7.25, 8.12
	Basics of Radio (Station block diagrams TX, RX, antenna, accessories)	Unit 6	8.1-8.4, 8.10-8.12
Day 3	The Radio Phenomena (How do radio waves get from one place to another?)	Unit 7	3.1-3.9
	Basic Electronics Building Blocks (Rectifier, Oscillator, Amplifier, Mixer, Filter)	Unit 9	8.6-8.8
Day 4	Types of Emissions to Convey Messages	Unit 5, 10	6.2, 6.5-6.6, 6.10, 8.4-8.5, 8.9
	FCC Rules and Regulations Lead to Good Operating Practices	Unit 11, 12	4.1-4.8, 5.1-5.6, 6.1-6.17
Day 5	Setting up a station		4.3, 8.12-8.40
	Safety Considerations (Physical, Electrical, Radio Frequency)		10.1-10.24
	On the air demonstrations		
Day 6	Special Operations	Unit 5	9.1-9.10
	On the air demonstrations		
	Test Preparation		11.1-11.80
Day 7	Practice examinations, review, and questions		ExamWIN Software practice tests
	On the air demonstrations		
Day 8	Advantages of ARRL and club membership		Pages iv, vii
	What do you do after you get your license?		
	Take the final exam		

To help the student to focus on questions that represent the material as presented in the FCC examination, the following questions can be highlighted. Caution, these are not the only questions that may be on the examination and students should study all the

questions. This list of questions should be suggested only for a final review prior to the actual test.

T1 A: 5, 7, 10, 11, 14 B: 2, 6, 8, 11, 15 C: 2, 5, 7 D: 2, 4, 5, 8 E: 3, 4, 8, 10, 11	T2 A: 2, 5, 7, 14, 15 B: 7, 9, 11, 13	T3 A: 3, 4, 5, 10 B: 4, 6, 11, 12	T4 A: 1, 2, 3, 7 B: 2, 8, 10 C: 5, 9, 10	T5 A: 5, 6, 7, 8 B: 2, 3, 4, 8 C: 1, 10, 11, 12
T6 A: 3, 4, 7, 9, 10, 13 B: 1, 4, 7 C: 2, 4, 5, 10	T7 A: A, 9, 20 B: 7, 10, 11, 12 C: 4, 5, 16, 19	T8 A: 3, 5, 8, 12 B: 5, 6, 11, 13, 15, 17 C: 5, 6, 10, 12, 15, 21 D: 2, 3, 9 E: 1, 2, 3, 4, 10 F: 1, 18, 21	T9 A: 6, 10, 13, 14, 20 B: 5, 6, 11, 15	T0 A: 2, 5, 11, 12 B: 3, 7, 10 C: 3, 8, 25, 16, 19 D: 1, 5, 3, 9, 14 E: 3, 6, 7 F: 5, 6, 8, 10

Note: The text material associated with each question can be found by referring to the question pool at the end of *Now You're Talking*

One technique for final study for the exam that might be used is to have each student take a practice examination either on the computer or on paper. At the end of the exam go over with the class each question missed and explain not only the correct answer but also the material supporting the correct answer. This will highlight the areas that may need additional clarification and instruction while providing confidence-building activities for the students.