Evanston Amateur Radio Community
Amateur Radio General Class Syllabus, Summer, 2009

Class Time:	Mondays 7:00 p.m. to 10:00 p.m.	Class Coordinator:	Marilyn Gardner (W9LUO)
Class Location:	Evanston Fire Department 909 Lake Street, Evanston 60201	Contact Information:	847-866-9159 w9luo@arrl.net

Course Description
This course will supplement the information contained in the text, allowing you to pass your amateur (ham) radio license and increase your operating privileges in the field or service of amateur radio.

Reading and Review
The student should read the entire text prior to attending the class. The text is *The ARRL General Class License Manual for Ham Radio*, 6th Edition, ARRL, ©2007 ARRL Order No. 9965 (ISBN: 0-87259-996-5). Upon completion of this course the attendee will be able to pass Element 3 and obtain their General Class Amateur Radio License.

Prerequisite
A currently valid Technician Class License and a commitment to read the assigned material. All material necessary to pass the General Class test is covered in the text and this course. A scientific calculator may be used in class and during the exam. Pencil or pen and paper for notes are handy. **Bring your textbook and this syllabus to class each session.**

Supplemental Reading (if details in addition to those in the text would help you to understand the material):

Understanding Basic Electronics -- First Edition, 320 pages. First edition, seventh printing. © 1992-2006, The American Radio Relay League, Inc.(ISBN: 0-87259-398-3) #3983 -- $29.95

Basic Radio -- Understanding the Key Building Blocks by Joel Hallas, W1ZR, 256 pages. First edition. © 2005, The American Radio Relay League, Inc.(ISBN: 0-87259-955-8) #9558 -- $29.95

Basic Antennas -- Understanding Practical Antennas and Designs by Joel R. Hallas, W1ZR, First edition. © 2008, The American Radio Relay League, Inc.(ISBN: 0-87259-999-X) #9994 -- $29.95

The ARRL Operating Manual, 352 Pages. Ninth edition. © 2007, The American Radio Relay League, Inc. (ISBN: 0-87259-109-3) #1093 -- $29.95

The ARRL Handbook for Radio Communications, CD-ROM version 13.0. Included with every book .Softcover. ARRL Order No. 0261 (ISBN 0-87259-139-5) $44.95

The ARRL Antenna Book, Twenty-first edition. © 2007, The American Radio Relay League, Inc.(ISBN: 0-87259-987-6) #9876 -- $44.95

Other Information and Expectations
Classes will begin promptly at 7:00 p.m. Please be on time and be prepared: there is a limited amount of time to cover required material. Prior to class the student is expected to complete the reading and review the questions identified in the syllabus. Note any questions or reading which is not clear to you and ask about these if they are not explained to your satisfaction in class. There are no stupid questions in class; what is stupid is not asking the questions. If you have questions about any of the material you may also call or email the instructor.

Preparation for the General Exam
The General exam has a question pool, which is available to all. Your textbook contains the question pool, that is, it has all questions that could be asked on the exam. Questions will be selected from the question pool by group. There are ten sections ("subelements") of the question pool, numbered G1 through G0. Within each section are two to six groups. One question on the exam will be take from each group. Pages 1-14 and 1-15 of your text list the sections and groups. There are 35 groups and 35 questions on the exam. Each chapter of the text asks you to review specific questions throughout the text (in white letters on a light blue background). Please do so as you read the book. You may fold back the edge of the page to cover the answers to the question when you read it. If you get the answer wrong, you can refer to the page in the book that is indicated.
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Take online practice exams at one or more of the locations listed here. Don't wait until you have completely read the book to start on the practice exams. If you have studied three groups, you should get at least three questions correct, but you will probably get more correct and this will help you to prepare. To pass the exam, you must answer at least 26 questions correctly.

AA9PW Practice Tests
http://www.aa9pw.com/
Simon Twigger/'s website provides practice FAA and FCC practice exams.
To access the practice exams go to the website above and look for "Take an Exam" on the left hand side of the page. Left click on the circle (also called a radio button) to the left of "General" and then on the "Take Exam"

eHam Practice Tests
http://www.eham.net/
eHam.net is a website dedicated to the amateur radio community. It contains a wealth of information including discussion forums, announcements, and an elmer discussion forum. To access the practice exams go to the website above and look for "Ham Exams" in the menu on the left hand side of the screen. It is the third item in the "Resources" menu. Left click on "Ham Exams", and then left click the radio button next to "General" To begin the test left click on the "Take Current Exam" button. Be sure that you **do not** use the "Recent Amateur Exams" section further down this page as some are out-of-date.

QRZ Practice Tests
http://www.qrz.com/
QRZ.Com is a website dedicated to the amateur radio community. It contains a wealth of information including a callsign database, discussion forums, and an online swap meet. To access the practice exams go to the website above and look for "Practice Tests" in the menu on the left hand side of the screen. It is the fifth item in the menu (which is located directly after the advertisements on the left hand side). Left click on "Start Test", and then left click on "General" Set the test number that you wish to take (there are 100) then click on the radio button next to the speed of the test. To begin the test left click on the "Begin Test" button.

Note any questions you have on the assigned material for each class and be sure to ask them in class. As you cover more material you will get a feel for which elements you understand well and which ones need additional study. Be sure to focus on the ones which need additional study.

This syllabus can serve as a guide to covering the material. Besides the reading, consider doing the other actions listed under "Preparing for the Next Session." While not required, they are designed to assist you in understanding the material.

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Session 1, Monday, June 22, 7:00 p.m., Practices, Signals and Equipment

Lesson	Subject	Read Pages	Questions to Review
1	General Class License	1-1 — 1-4	--
	How to Use the Text	1-4 — 1-6	--
	The Upgrade Trail	1-7 — 1-15	--
2	HF Operating Techniques	1-16, 2-1 — 2-13	G2A01 through G2A13, G2B01 through G2B13, G2D08, G2D09, G2F01 through G2F11
	Digital Modes 1	2-14 — 2-17	G2E02 through G2E11, G8B11
	Digital Modes 2	5-3 — 5-7	G2E01 through G2E03, G2E05, G2E06, G8B08 through G8B10
	Nets and Emergency Operation	2-17 — 2-22	G1B04, G2C01 through G2C05, G2C07 through G2C12
	Signal Review	5-1 — 5-3	G8A01 through G2A03, G8A05 through G8A07, G8A11
3	Radio's Building Blocks	5-7 — 5-10	G7B07 through G7B09, G8A04, G8A12, G8B04, G8B12
	Transmitter Structure	5-10 — 5-17	G4A02, G4A06 through G4A12, G4D01 through G4D03, G7A06, G7A07, G7A10, G7B10 through G7B14, G8B04 through G8B07, G8A08 through G8A10
	Receiver Structure	5-18 — 5-22	G4A01, G4A03 through G4A05, G4A13, G7A08 through G7A09, G7A11 through G7A13, G7B01, G7B02, G4B09, G4D04 through G4D06, G8B01, G8B02
	HF Station Installation	5-22 — 5-25	G4C01 through G4C09, G4C11 through G4C13, G4E01 through G4E05, G7A05

Suggested Activities: Listen to one or more of the following nets and pay attention to procedures. Note things that were not done correctly, either by net control or by stations checking in: Tuesday, 8:00 p.m., 146.760 (SATERN); 9:00 p.m., 146.760 (CFMC); Thursday, 8:00 p.m., 147.345 or 442.725 (NSRC); Sunday, 9:00 p.m., 147.315 (MAC). Or, via echolink, Tuesday, 8:00 p.m., 140533 (SATERN); 9:00 p.m., 140533 (CFMC); Saturday, 6:00 p.m.. 7206 (Hurricane Prep Net); Sunday, 8:00 p.m., 336037 (Red Cross and Disaster Communicators Forum)

Come to the Evanston Field Day on Saturday, June 27, (Leon Place between Ridge and Asbury) and observe operating techniques and do some operating of your own. See how the stations are set up. Check out the digital modes in operation at the time you are there.

Session 2, Monday, June 29, 7:00 p.m., Components, Voltage and Power

Lesson	Subject	Read Pages	Questions to Review
4	Basic Electrical Components	4-1 — 4-3	G5B03 through G5B05
5	Components	4-7 — 4.13	G5B11, G5B12, G5B14, G5B15. G6A01 through G6A13, G7A19, G7A22
6	Series and Parallel Components	4-13 — 4.16	G5B02, G5C04, G5C06, G5C08 through G5C16
7	Power Measurements	4-3 — 4-7	G5B01, G5B05 through G5B09, G5B11 through G5B15
Suggested Activity: Try working some or all of the problems on the handout sheet. The problems are grouped by category. If you find one category very easy, spend your time on the other categories.			

Session 3, Monday, July 6, Impedance, Reactance, Resonance and Circuits

Lesson	Subject	Read Pages	Questions to Review
8	Transformers and Impedance	4-16 — 4-17	G5C01 through G5C03. G6C06, G5C07, G7A23
	Vacuum Tubes	4-17 — 4-18	G6B10 through G6B12
9	Reactance and Resonance	4-18 — 4-22	G5A01 through G5A14
10	Semiconductors	4-22 — 4-29	G6B01 through G6B03, G6B05 through G6B09, G6C01 through G6C12, G7A21, G7B01 through G7B06
11	Practical Circuits	4-30 — 4-40	G4D07 through G4D11, G4E07 through G4E11, G6B04, G6B13 through G6B16, G7A01 through G7A04, G7A14 through G7A18, G7A20, G7A24
	Test Equipment	4-40 — 4-44	G4B01 through G4B08, GRB10 through G4B16
Suggested Activity: Try working some or all of the problems on the handout sheet. The problems are grouped by category. If you find one category very easy, spend your time on the other categories.			

Session 4, Monday, July 13, Antennas, Propagation, Safety, and Regulations

Lesson	Subject	Read Pages	Questions to Review
12	Antenna Basics	6-1 — 6-2	--
	Dipoles, Ground Planes and Random Wires	6-2 — 6-7	G9B01 through G9B12
	Yagi Antennas	6-7 — 6-11	G2D04, G2D05, G2D11, G9C01 through G9C12, G9C18
	Loop Antennas	6-12 — 6-13	G9C13 through G9C17, G9C19 through G9C21
	Specialized Antennas	6-14 — 6-17	G9D01 through G9D12
	Feed Lines	6-18 — 6-21	G9A01through G9A14
13	Propagation: Ionosphere	7-1 — 7-5	G2C06, G3B04, G3B10. G3B13. GCB14. G3C01 through G3C05, G3C09 through G3C12
	Propagation: The Sun	7-6 — 7-10	G3A01 through G3A19, G3B01 through G3B08, G3B11, G3B12, G3C11
	Propagation: Scatter Modes	7-10 — 7-12	G3C06 through G3C10, G3C13, G3C14
14	Electrical Safety	8-1 — 8-7	G4C10, G4E06, G4E12, G4E13, G0B01 through G0B06, G0B09 through G0B14
	RF Exposure	8-7 — 8-12	G0A01 through G0A11, G0A13 through G0A15
	Outdoor Safety	8-12 — 8-14	G0A12, G0B07, G0B08
15	Regulatory Bodies	3-1 — 3-2	G1B01, G1D01 through G1D03
	Amateur Licensing Rules	3-3 — 3-5	G1D0 through G1D13, G1E09
	Control Operator Privileges	3-5 — 3-16	G1A01 through G1A16, G1B02, G1B03, G1B05 through G1B10, G1B13, G1E01 through G1E08, G1E10, G2D07 through G2D09, G2D12
	Technical Rules and Standards	3.16 — 3-18	G1B11, G1B12, G1C01 through G1C13, G1D10
Suggested Activity: Determine where you might locate a dipole for your use and calculate the length you could use for 40 and 80 meters. Download a propagation program and set it up for your location.			

Session 5, Saturday, July 18, 9:00 a.m. through 3:00 p.m., Review Session

During this session we will review material for the exam using games, projects, and Q&A sessions. There will be a one hour break for lunch. You may bring a lunch to eat in the break room, go home for lunch, or eat at a nearby restaurant.

Session 6, VE Exam, July 19, 2:30 p.m. to 4:00 p.m.
As a service to the amateur community, we will hold an exam session at the above date, time, and location. You are not required to take the exam at this time, however it's best to take the exam wile the material is still fresh. To find other exam sessions that may be more convenient to your home or work location, visit http://www.arrl.org/ and click on "Exams." If you pass the General exam and wish to try the Extra, you are welcome to do so. No additional fee will be charged for taking the Extra exam after you pass the General.

What to Bring to the Exam Session

Bring the original and photocopy of your Tech license. We will keep the photocopy. Two forms of identification (one must be a state issued drivers license or identification card) are also needed. (You keep those.)

Bring a calculator capable of the types of calculations you have done in the course. (all calculators will be checked by a VE prior to use: they **cannot** be a PDA or store any formulas or answers).

Bring both a pen and pencils with erasers

Blank scratch paper will be provided.

$15.00 exam fee (exact change is preferred, or a personal check payable to "ARRL")

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Local Amateur Radio Clubs

Evanston Amateur Radio Community http://www.evanstonhams.org/
It is the special purpose of this group to be ready to support the City of Evanston in emergency situations, as requested by the Evanston Office of Emergency Preparedness. In addition, the group wants to further the exchange of information and cooperation between members, to promote radio knowledge, fraternalism and individual operating efficiency, and to so conduct club programs and activities as to advance the general interest and welfare of Amateur Radio in the community. This new club sponsors a weekly simplex net, Mondays at 8:00 p.m. on 147.435 FM, Field Day, and classes such as this one. It also encourages participation in local public service events.

Metro Amateur Radio Club http://www.metroarc.org/
This club supports an open repeater system, operates Field Day, has brunches/dinners, and has an amateur radio related program at each meeting. They also offer license exams and sponsor a weekly net Sundays at 9:00 p.m. on 147.315 +600 PL 107.2

North Shore Radio Club http://www.ns9rc.org/
This club extends through the entire spectrum of Amateur Radio. Their monthly meetings feature presentations on a wide variety of topics and speakers are chosen from the many club and community resources. The club operates Field Day, an annual fox hunts, and provides public service communications for local organizations and charities. They have several repeaters and sponsor a weekly net on Thursdays at 8:00 p.m. on 147.345 +600 PL 107.2