

BASIC AMATEUR RADIO LICENSING COURSE 2011

Fall Session Course Outline

September 22 Chapter 1 - INTRODUCTION TO AMATEUR RADIO & REGISTRATION

Learning Objectives for this unit

- The broad scope of the amateur radio hobby
- The radio licensing process
- Approaches to studying for the license

Unit Instructors: Howard VE1DHD, Scott VE1QD, Tom VE1GTC

September 24 **Chapter 2, 3 - FUNDAMENTALS / TERMS / OHMS LAW / POWER**

Learning Objectives for this unit

- Provide an introduction to elementary atomic theory
- Familiarity with basic concepts such as:
 - Conductors, insulators, resistance, direct and alternating current, electromotive force, magnets, cells and batteries and schematics
- Define Ohm's law
- Making simple calculations using Ohm's law
- The concept of power and the formula for its calculation

Unit Instructors: Tom VE1GTC

September 29 Chapter 3 - PRACTICAL APPLICATION OF OHM'S LAW

Using knowledge gained on Saturday's gained on resistors, voltage and power

Students will try to apply their skill in a real application

Unit Instructors: Tom VE1GTC, James VE1OES

October 6 Chapter 4 - INDUCTORS AND CAPACTIORS

Learning Objectives for this unit

- Define the terms inductance, capacitance, inductive and capacitive reactance and explain the factors affecting each
- Do simple calculations involving capacitance and inductance
- Explain the role of the inductor and capacitor in circuits

Unit Instructors: Barry VE1TRI, James VE1OES

October 13 **Chapter 5 - WAVES, WAVELENGTHS, FREQUENCY AND BANDS**

Learning Objectives for this unit

- Understand the terms frequency, wavelength and band
- Be able to do simple calculations involving the relationship between wavelength and frequency
- Recognize the bands that make up the amateur portion of the radio spectrum
- Use of beacons, identifiers -Modes of transmission, Bandwidth, Frequency

Unit Instructors: Gary VE1GRB, Scott VE1QD

October 20 **Chapter 6 – PROPAGATION**

Learning Objectives for this unit

- Classification of waves as it pertains to propagation
- Factors which affect propagation of radio waves
- Propagation characteristics of the different amateur bands

Unit Instructors: Scott VE1QD

October 22 Chapters 7, 8 - TRANSMISSION LINE / ANTENNAS

Learning Objectives for this unit

- Characteristics of different types of transmission lines
- Types of connectors used in amateur radio
- Troubleshooting RF transmission problems
- Describe the features of common antennas in amateur radio
- Calculate dimensions required for various antennas
- How to use simple antenna formulas

Unit Instructors: Fred VE1FA

October 27 **Chapter 17, 16 - REGULATIONS & RULES / SAFETY**

Learning Objectives for this unit

- Identify and understand the sources of danger in amateur radio
- Basic safety precaution both inside the shack and when working with antennas
- Introduce the materials students need to understand the regulatory structure of amateur radio in Canada
- Become conversant with specific rules and regulations

Unit Instructors: Howard VE1DHD, Scott VE1QD

(TBA tentative) **Chapters 12 - INTRO TO 2-METER OPERATION VHF/UHF/IRLP**

Learning Objectives for this unit

- How to use local repeaters, linking protocol and the IRLP node demo.

Unit Instructor: Rob Ewert VE1KS

November 3 Chapter 9 - ACTIVE DEVICES: DIODES, TRANSISTORS, TUBES

Learning Objectives for this unit

- Basic theory of semiconductor devices and tubes
- Identifying the parts of each active device
- Comparing tubes and solid state devices
- Troubleshooting problems with active devices

Unit Instructor: Carolyn VE1FRG

November 5 Chapter 11, 12 - ESTABLISHING & EQUIPPING AN AMATEUR STATION

Learning Objectives for this unit

- Identifying the equipment for various modes of operation
- Performing the basic operation of each piece of equipment
- Determining the accessories needed in a station and their relative position in the transmission path

- Operating procedures for different modes
- Operating with UTC (world time)
- Q codes, abbreviations, phonetic alphabets and more

Unit Instructors: Howard VE1DHD, Scott VE1QD, Dick VE1AI, Brian VE1AZV,

November 10 Chapter 10 - POWER SUPPLIES

Learning Objectives for this unit

- Key functions of power supplies
- Voltage conversion, rectification and filtering
- Reasons for voltage variations and how to resolve them
- Design and operation of power supplies for amateur radio

Unit Instructor: Frank VE1FHW

November 17 Chapter 13 - MODULATION AND TRANSMITTERS

Learning Objectives for this unit

- Become familiar with different types of modulation used in amateur radio
- Be able to identify the various components of various types of transmitters and their position relative to each other

Unit Instructor: Fred VE1FA

November 24 Chapter 14 - RECEIVERS

Learning Objectives for this unit

- Become familiar with the characteristics of receivers and measurements of their performance
- Be able to identify the different stages of various types of receivers, their functions and location

Unit Instructors: Fred VE1FA

December 1 Chapters 15 - RADIO FREQUENCY INTERFERENCE

Learning Objectives for this unit

- Understand the sources and types of radio frequency interference (RFI)
- Methods of eliminating RFI

Unit Instructors: Fred VE1FA

December 8 REVIEW OF CHAPTERS 9 to 15

After the review, there is a practice test on material covered to date.

December 10 WRITE THE BASIC AMATEUR RADIO QUALIFICATION EXAM

The multiple choice exam starts at 10:00 AM at the HARC Club Station