

# ANNAPOLIS VALLEY AMATEUR RADIO CLUB

## BASIC AMATEUR RADIO LICENSING COURSE

### Course Outline & Handout Materials

#### **Chapter 1 – INTRODUCTION TO AMATEUR RADIO & REGISTRATION**

Learning Objective for this unit:

- Understanding the broad scope of the Amateur Radio hobby;
- The radio licensing process; and
- Approaches to studying for the license.

Course Material Download Files:

[Intro - What Hams Do](#)

[Ch 1 - Introduction to Amateur Radio Course](#)

[Ch 1 - RIC-3 Update June 2013](#)

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#### **Chapter 2 – BASICS**

Learning Objective for this unit:

- Providing an introduction to elementary atomic theory; and
- Familiarity with basic concepts such as conductors, insulators, resistance, direct and alternating current, electromotive force, magnets, cells, batteries and schematics.

Course Material Download Files:

[Ch 2 - Basic Electricity](#)

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### **Chapter 3 – OHM’S LAW and POWER**

Learning objectives for this chapter:

- Define Ohm’s law and basic Algebra;
- Make simple calculations using Ohm’s law; and
- The concept of power and the formula for its calculation.

Course Material Download Files:

[Ch 3 – Ohm’s Law](#)

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### **Chapter 4 – INDUCTORS AND CAPACITORS**

Learning Objective for this chapter:

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

Course Material Download Files:

[Ch 4A - Inductance](#)

[Ch 4B - Capacitance](#)

[Ch 4C - Resonance](#)

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### **Chapter 5 – WAVES, WAVELENGTHS, FREQUENCY AND BANDS**

Learning Objective for this chapter:

- Understand the term frequency, wavelength and band;
- Conduct simple calculations involving the relationship between wavelength and frequency;
- Recognize the bands that make up the Amateur portion of the radio spectrum; and
- Understand the use of beacons, identifiers, Mode of transmission, Bandwidth, and Frequency.

Course Material Download Files:

[Ch 5 - Waves, Wavelength, Frequency](#)

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## **Chapter 6 - PROPAGATION**

Learning Objective for this chapter:

- Understand the classification of waves as it pertains to propagation;
- Understand factors that affect propagation of radio waves; and
- Understand propagation characteristics of the different Amateur bands.

Course Material Download Files:

[Ch 6 - Propagation](#)

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## **Chapters 7 – TRANSMISSION LINES**

Learning Objective for this chapter:

- Understand the characteristics of different types of transmission lines;
- Recognize the types of connectors used in Amateur Radio; and
- Troubleshoot RF transmission problems.

Course Material Download Files:

[Ch 7 - Transmission Lines](#)

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## **Chapter 8 – ANTENNAS**

Learning Objective for this chapter:

- Describe the features of common antennas in Amateur Radio;
- Calculate dimensions required for various antennas; and
- Use simple antenna formulas.

Course Material Download Files:

[Ch 8 - Antennas](#)

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## **Chapter 9 – ACTIVE DEVICES: DIODES, TRANSISTORS, TUBES**

Learning Objective for this chapter:

- Understand the basic theory of semiconductor devices and tubes;
- Identify the parts of each active device;
- Compare tubes and solid state devices; and
- Troubleshoot problems with active devices.

Course Material Download Files:

[Ch 9 - Diodes, Transistors and Tubes](#)

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## **Chapter 10 – POWER SUPPLIES**

Learning Objective for this unit

- Understand key functions of power supplies;
- Understand voltage conversion, rectification and filtering;
- Determine reasons for voltage variation and how to resolve them; and
- Design and operation of power supplies for Amateur Radio.

Course Material Download Files:

[Ch 10 - Power Supplies](#)

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## **Chapter 11, 12 – ESTABLISHING & EQUIPPING AN AMATEUR STATION & BASIC STATION OPERATION**

Learning Objective for this unit

- Identify the equipment for various modes of operation;
- Perform the basic operation of each piece of equipment;
- Determine the accessories needed in a station and their relative position in the transmission path;
- Operating procedures for different modes;
- Operating with UCT (world time); and
- Q codes, abbreviations, phonetic alphabet.

Course Material Download Files:

[Ch 11 - Establishing and Equipping a Station](#)

[Ch 12 - Communications Procedures](#)

[Ch 12 - Routine Station Operations](#)

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## **Chapter 13 – MODULATION AND TRANSMITTERS**

Learning Objective for this unit

- Identify different types of modulation used in Amateur Radio; and
- Identify the various components of various types of transmitters and their position relative to each other.

Course Material Download Files:

[Ch 13 - Modulation and Transmitters](#)

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## **Chapter 14 – RECEIVERS**

Learning Objective for this unit

- Become familiar with the characteristics of receivers and measurements of their performance; and
- Identify the different stages of various types of receivers, their functions and location.

Course Material Download Files:

[Ch 14 - Radio Receivers](#)

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## **Chapter 15 – RADIO FREQUENCY INTERFERENCE**

Learning Objective for this unit

- Understanding the sources and type of radio interference (RFI); and
- Determine methods of eliminating RFI.

Course Material Download Files:

[Ch 15 - Radio Frequency Interference](#)

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## **Chapter 16 - SAFETY**

Learning Objective for this unit

- Identify and understand the sources of danger in Amateur Radio; and
- Understand basic safety precautions both inside the shack and when working with antennas.

Course Material Download Files:

[Ch 16 - Safety](#)

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## **Chapter 17 – REGULATIONS & RULES**

Learning Objective for this unit

- Understand the regulatory structure of Amateur Radio in Canada; and
- Become conversant with specific rules and regulations.

Course Material Download Files:

[Ch 17 - RBR 4 Issue 2 2014](#)

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