



NE4LH

Radio Academy

General Class Syllabus

COMMISSION'S RULES

G1A - General Class control operator frequency privileges; primary and secondary allocations

G1B - Antenna structure limitations; good engineering and good amateur practice; beacon operation; prohibited transmissions; retransmitting radio signals

G1C - Transmitter power regulations; data emission standards

G1D - Volunteer Examiners and Volunteer Examiner Coordinators; temporary identification

G1E – Control categories; repeater regulations; harmful interference; third party rules; ITU regions; automatically controlled digital station

OPERATING PROCEDURES

G2A - Phone operating procedures; USB/LSB conventions; procedural signals; breaking into a contact; VOX operation

G2B - Operating courtesy; band plans; emergencies, including drills and emergency communications

G2C - CW operating procedures and procedural signals; Q signals and common abbreviations; full break in

G2D - Amateur Auxiliary; minimizing interference; HF operations

G2E - Digital operating; procedures, procedural signals and common abbreviations



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RADIO WAVE PROPAGATION

G3A - Sunspots and solar radiation; ionospheric disturbances; propagation forecasting and indices

G3B - Maximum Usable Frequency; Lowest Usable Frequency; propagation

G3C - Ionospheric layers; critical angle and frequency; HF scatter; Near-Vertical Incidence Skywave

AMATEUR RADIO PRACTICES

G4A – Station Operation and set up

G4B - Test and monitoring equipment; two-tone test

G4C - Interference with consumer electronics; grounding; DSP

G4D - Speech processors; S meters; sideband operation near band edges

G4E - HF mobile radio installations; emergency and battery powered operation

ELECTRICAL PRINCIPLES

G5A - Reactance; inductance; capacitance; impedance; impedance matching

G5B - The Decibel; current and voltage dividers; electrical power calculations; sine wave root-mean-square (RMS) values; PEP calculations

G5C – Resistors, capacitors, and inductors in series and parallel; transformers



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CIRCUIT COMPONENTS

G6A – Resistors; Capacitors; Inductors; Rectifiers; solid state diodes and transistors; vacuum tubes; batteries

G6B - Analog and digital integrated circuits (ICs); microprocessors; memory; I/O devices; microwave ICs

(MMICs); display devices

PRACTICAL CIRCUITS

G7A Power supplies; and schematic symbols

G7B - Digital circuits; amplifiers and oscillators

G7C - Receivers and transmitters; filters, oscillators

SIGNALS AND EMISSIONS

G8A - Carriers and modulation; AM; FM; single sideband; modulation envelope; digital modulation; over modulation

G8B - Frequency mixing; multiplication; bandwidths of various modes; deviation

G8C – Digital emission modes

ANTENNAS AND FEEDLINES

G9A - Antenna feed lines; characteristic impedance, and attenuation; SWR calculation, measurement and effects; matching networks

G9B - Basic antennas

G9C - Directional antennas

G9D - Specialized antennas



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ELECTRICAL AND RF SAFETY

G0A - RF safety principles, rules and guidelines; routine station evaluation

G0B - Safety in the ham shack; electrical shock and treatment, safety grounding, fusing, interlocks, wiring, antenna and tower safety