



MT. PLEASANT HIGH SCHOOL

AMATEUR
RADIO CLUB

Syllabus 2021

Edwin T. Scallon Moderator / Instructor

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RADIO CLUB

Syllabus Fall 2021

DATES

SUBJECT

October 14 + October 21	Two organizational meetings Discussion and overview of new club
October 24, 2021	Introduction to equipment and accessories Introduction to radio terminology and ARRL Download and print ARRL Technician Class Book
November 2, 2021	Introduction to VHF/UHF radios Repeater directories Setting up CTCSS, OFFSETS, and DTMF Using repeaters and Simplex channels
November 4, 2021	LAB #1 (Radio Practical) Learn soldering techniques Prepare 6' Stereo wire to be connected Solder Stereo terminals to the prepared wires on both ends
November 9, 2021	LAB # 2 (Test Equipment) Introduction to a VOM meter and conduct continuity test Measure battery strength learn positive and negative poles Discuss Ohm's Law and its application in circuits
November 18, 2021	Introduction to Morse Code Introduction to HF and VHF antenna systems Introduction to HF and Antenna Tuners Band Allocations Ionosphere layers
November 20, 2021	LAB #3 (HF Radio) Introduction to HF Transceivers Dummy Loads Tuning HF Radios
November 22, 2021	Technician Class Practice Exam
HOLIDAY RECESS	December 23, 2021 to January 2, 2022 CLASS RESUMES 1/3/22

January 5, 2022	<ul style="list-style-type: none"> Introduction to License elements Introduction to Digital Communication Introduction to Frequency and Wavelength
January 7, 2022	<ul style="list-style-type: none"> LAB #4 (Building Digital Interface) Identification of Electrical Components Begin populating digital board
January 11, 2022	<ul style="list-style-type: none"> Basic Electrical Theory and Principals Electrical Safety Location of antenna construction What is RF and how is it measured Volt, Watt and Amperes Electrical Ground -vs- RF Ground AC -vs- DC Using formulas for Ohm's Law, Watts, Volts and Amps
January 14, 2022	<ul style="list-style-type: none"> LAB #5 (Finish Digital Interface Construction) Finish populating the Digital Interface Enclosing the board and attaching the audio wires Downloading Digital Communication Connecting Interface with a Laptop Computer Connect Interface to HF Radio Testing the board on 20 Meters and receiving signal Making a contact using the Digital Interface you built
January 19, 2022	<ul style="list-style-type: none"> Modulation on CW, AM, FM Calculating formula for $1/2\lambda$ Dipole
January 28, 2022	<ul style="list-style-type: none"> LAB #6 (Constructing feed lines fro Formula) Constructing Ladder line and Coax with RS-239 Connector How to make contacts on VHF and on HF Review of Technician Test Booklet
February 3, 2022	<ul style="list-style-type: none"> QRZ database Setting up station with Radio, Amp, Tuner and Feed Line Bandwidth & Band transmission Radio and Signal Fundamentals (Text ch. 2) Phonetic alphabet and 'Q' signals SWR and RST Reporting Systems (Report Signal Strength) Practice Exam
February 8, 2022	<ul style="list-style-type: none"> Difference between Amateur Radio and Broadcast Radio Difference between AM and FM signals

February 10, 2022

LAB #7 (Beginning to design FM Radio
Elements on Schematics
Converting AC to DC using Full Bridge Rectifier
How to check for a blown diode in circuit
Resistor values by color or by Ohm Meter
Use of digital Multi-meter

February 15, 2020

Call Signals W, K, and n AND WHY
REVIEW Amateur bands and privileges
CW no longer required, but learn it 4 letters at a time
Licensing elements for FCC License
PRACTICE TEST

February 18, 2022

LAB #7 (Begin constructing low power FM Transmitter)
Identify the different circuits you need to build
Identify the components needed
Describe cabinet to be used
Create Oscillator circuit on paper with values

WINTER BREAK FEBRUARY 21 TO FEBRUARY 27 CLASSES RESUME FEBRUARY 28

March 3, 2022

Designing Schematic of FM Broadcast transmitter
Listing component values based on electrical engineering