Print Date: 8/21/2023

Course Objectives/Course Outline
Spokane Community College

Course Title: RF COMMUNICATIONS
Prefix and Course Number: ELECT 221

Course Learning Outcomes:
By the end of this course, a student should be able to:

- Know and understand accepted personnel and equipment safety procedures and terminology
- Know basic communication device and systems terminology
- Understand the general theory of communication device hardware
- Be able to identify the common communication devices
- Understand and apply technology appropriate troubleshooting techniques and procedures
- Have general knowledge applicable to troubleshooting and repair of communication devices

COURSE OUTLINE:

I. Course Overview
   A. Professionalism
   B. Tool and Book List
   C. Course Outline
   D. Grading
II. Personal Safety
   A. Electrical Shock
   B. RF Exposure and Human Safety
   C. Eye Protection
III. Equipment Protection
   A. Static Electricity
   B. Liquids
   C. Cables
IV. Introduction to Communication Systems
   A. Elements
   B. Time and Frequency Domains
   C. Noise and Communications
   D. Safety and Communication Systems
V. RF Concepts
   A. High Frequency Effects
   B. RF Amplifiers
   C. RF Oscillators
   D. Mixers
   E. Frequency Synthesizers
VI. Amplitude Modulation (AM)
   A. Time Domain
   B. Frequency Domain

C. Quadrature and Stereo
D. Suppressed Carrier

VII. Frequency/Phase Modulation
A. Frequency Modulation (FM)
B. Phase Modulation
C. Spectrum
D. Noise
E. Stereo
F. Measurements

VIII. Transmitters
A. Requirements and Safety
B. Topologies
C. Full-Carrier AM
D. Single Sideband AM
E. FM
F. Power Measurements

IX. Receivers
A. Topologies and Safety
B. Characteristics
C. Demodulators
D. Communication Receivers
E. Transceivers
F. Measurements
G.