FUNDAMENTALS OF VOICE & DATA CABLING
TERMS WORKSHEET
CHAPTER 3

Define the following terms:

Term	Definition
Signal reflection	Signals bouncing back on the cable instead of going where they're supposed to go
Infrared	A wireless technology that uses infrared light; point-to-point connections necessary
Optical free-space	Atmosphere; when wireless signals cross free space
Wireless signals	Electromagnetic signals that don't need a cable
Attenuation	Loss of signal strength
Impedence	A type of resistance that intrinsic to the cable itself. It is the sum of inductive reactance and capacitive reactance
Decibels (in regards to signals)	Measurement of attenuation
Noise	Unwanted electrical or radio signals on a cable
NEXT	Near End Cross Talk
FEXT	Far End Cross Talk
EMI	Electomagnetic Interference
RFI	Radio Frequency Interference
Shielding	A metal braid or foil that surrounds wires or cable to keep EMI and RFI out
Cancellation	Twisting of wires in pairs to create a shielding effect
Dispersion	Scattering of light and signal on a fiber cable
Voltage	Electromagnetic force or pressure; represented as V or E
Current	Flow rate of electrons on a wire; represented as I
Resistance	The opposition of the flow of electrons; represented as R
Ohm's law	States mathematical relationship between electrical voltage, resistance, and current. V=IR
Power	Measurement of rate at which work can get done using electricity available
Volts	Measurement for voltage
Ohms	Measurement for resistance
Amps	Measurement for current
Watts	Measurement for power
Ion	An atom with more or fewer electrons than normal
AC	Alternating current; switches back and forth at a rate of 50-60 Hertz (cycles per second)
Power transformer	Reduces power on an AC line
Skin effect	Current migrating out to skin of conductor, rather than traveling through core; property of AC

DC	Direct current, only flows in one direction (neg. to pos.)
ESD	Electrostatic Discharge
Analog signals	Have continuous voltage, but change shape continuously
Digital signals	Change from one state to another (on/off), but shape of signal doesn't vary
Capacitance	Function of how much signal the cable can carry; depends on how close the connectors are to each other
Impedence mismatch	When signal is reflected back up the cable (upstream)
Ground	Wire that will send stray current to the earth; creates a path to earth
Ground potential	Difference between voltage on ground wire and the earth at the grounding rod
Grounding loop	Different ground potentials on different ground rods can create excess voltage on one or other of grounds so that current exists on ground wire
Ground electrode	Rod that goes into the ground
GFCI	Ground Fault Circuit Interrupter – an outlet that includes a circuit breaker to stop the flow of electrons
Power fault	When the ground doesn't work correctly
TIA/EIA 607	Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications – standard that describes how networks should be grounded in a building
Bonding	Bringing grounding equipment/wires together at a location
Grounding busbar	Device to ground multiple wires at a point in a building
Photon	Light particle
Refractive index	Property of optical materials that relates to the velocity of light in the material. Calculated by dividing light velocity through a specific material by light velocity in free space.
Cladding	A type of shielding used in fibre optic cables
Modulation	Process of encoding wireless signals before they're transmitted
Frequency	A particular range of the radio spectrum
Bandwidth	Width of a band of electromagnetic frequencies
Telephony	Science of translating sound into electrical signals, transmitting them to a destination, and translating them back into sound
VoIP	Voice over IP telephony
Baseband	A single, unmiltiplexed channel dedicated to sending 1 signal
Broadband	A multiplexed channel that can send more than 1 signal at a time
CATV	Community access TV
DOCSIS	Data Over Cable Service Interface Specifications – standard for cable modems
POTS	Plain Old Telephone System

DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
ISDN	Integrated Services Digital Network, a WAN technology
T1 line	Equal to 24 DST0 lines, or 1.544 Mbps
T3 line	Equal to 672 DST0's (or 28 T1's), or 44.736 Mpbs
FDDI	Fiber Distributed Data Interface, a dual-ring fiber physical topology using Token passing logical topology
SONET	Synchronous Optical Network for high-speed connections
ATM	Asynchronous Transfer Mode for high-speed switching using 53-byte cells