Duration:	**12 weeks**
Course:	**Audio Electronics Fundamentals**
Instructor:	**Don Hart**

Course Objective: Students should acquire a grasp of fundamental principles of electricity and the mechanisms of basic electronic circuits, with a focus on their application in professional audio. Please do not treat this course lightly: it is fundamental to most audio concepts you will encounter in your programme.

Bio: Don graduated from the Electronics Engineering Technology Programme of De Institute of Technology in 1974. Since then, he has been involved in the sales, service and design of pro and consumer audio equipment. As a bassist since the mid 1960s, Don has performed and recorded with a variety of musical acts in Canada and the US. Don's musical interests have evolved from recording engineering/producing as a hobby, to his current interest in Ghostrider Studios in Port Credit.

Week	Topic
1	Introduction to basic principles of the physics of electricity. Overview of metric prefixes, scientific notation and units of electrical measurement.
2	Conductors and insulators. Audio cables: Unbalanced and balanced cables. Noise minimization concepts. Gain & decibels in voltage and power.
3	Ohm's Law; the relationships of voltage, current and resistance in dc circuits. Simple s circuits and calculation of series circuit values. Basic electrical power concepts.
4	Basic ac circuits. Introduction of concepts of ac waveform parameters. Where does household electricity come from? Safety issues. Introduction of DMM functions. Decibels.
5	Quiz #1 in class. Resistor colour code. Characteristics of resistor types. Resistors in series and parallel.
6	**Mid Term Exam.**
7	Quiz #2. Loudspeakers as resistance elements. Introduction to the concepts of reactance and impedance. Matching loudspeakers to amplifiers.
8	Inductors and inductance. Electromagnetism and its application to transducers. Calculating inductive reactance.
9	Introduction to soldering. Curing the iron. Characteristics of good solder joints. Preparation of cables and connectors prior to soldering. Using DMM to confirm connection integrity.
10	Assignment 1 handed out: Assemble an XLR cable, and bring to class next week. Grading on cable preparation and soldering. Capacitors and capacitance in audio cables.
11	Quiz #3. More on capacitors. Calculating capacitive reactance. Calculating the cut off frequency in audio cabling.
12	Review, Review, Review. Q & A.

Evaluation

Mid Term Exam	25%
Final Exam	25%
Quizzes & Assignment 1	40%
Attendance & Participation	10%
Total	100%