

# ELECTRONIC REPAIR TECHNOLOGY (ELRT)

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## ELRT 1001 Credits: 3

### Alternating Current (AC) Basic Total Hours: 70

A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, resonance, and transformers.

**Pre-requisite(s):** ELRT 1002

## ELRT 1002 Credits: 3

### DC Circuit Analysis Total Hours: 70

A study of the fundamentals of direct current including Ohm's law, Kirchoff's laws and circuit analysis techniques. Emphasis is placed on circuit analysis of resistive networks and DC measurements and includes learning about magnetism, electromagnetism, and electromagnetic devices.

## ELRT 1003 Credits: 3

### Power Supply Fundamentals Total Hours: 70

This course is designed to build on the knowledge and skills acquired in the previous courses, and is a study of diodes and other semiconductor devices, including analysis of static and dynamic characteristics and biasing techniques of solid state devices.

**Pre-requisite(s):** ELRT 1001, ELRT 1002

## ELRT 1004 Credits: 5

### Technical Skills 1 Total Hours: 125

This course introduces students to both passive and active electronic components. Basic analog and digital circuits and theory of operation are covered. The labs allow the students to master the use of electronic instruments and develop soldering/reworking skills. The labs also reinforce the concepts discussed in class with a hands-on approach and allow the students to gain significant experience with electrical instruments such as digital and analog multimeters, oscilloscopes, function generator, and benchtop variable power supply.

## ELRT 1005 Credits: 1

### Introduction to Lean Six Sigma Total Hours: 25

Students will be introduced to the Six Sigma or Lean Six Sigma methodology and apply their knowledge to transactional and operational processes, as well as products. Additionally, learners will be able to identify root causes of moderately complex problems, and find and implement solutions.

## ELRT 1200 Credits: 1

### Customer Service Essentials Total Hours: 25

Students learn the basic concepts and current trends in the customer service industry. Special areas of emphasis include problem-solving, development of a customer service strategy, creating customer service systems, coping with challenging customers, customer retention, and measuring satisfaction.

## ELRT 1201 Credits: 3

### Measurement & Instrumentation Total Hours: 70

This course introduces students to the basic use and operation, cycle sequence diagnostic, troubleshooting and disassembly of Samsung domestic appliances. Students will be able to program and operate the six major domestic appliances: refrigerator, top-load, washer, electric dryer, built-in dishwasher, electric stove, and counter top microwave oven. Focus will be placed on health and safety, empathy, and good customer relations. Student will apply fundamental concepts in electricity including AC and DC.

## ELRT 1202 Credits: 3

### Samsung Systems and Controls Total Hours: 75

This course introduces students to basic troubleshooting, disassembly and re-assembly of Samsung domestic appliances.

## ELRT 1203 Credits: 5

### Technical Skills 2 Total Hours: 125

This course provides opportunities for students to practice their skills in an authentic workplace environment to gain valuable work experience for successful entry into the electronics repair field.

## ELRT 1204 Credits: 3

### Software for Repair Technician Total Hours: 60

This course provides students with an introduction to software applications commonly used in the electronics repair industry. Topics will include Customer Relationship Management (CRM), spreadsheets, email and technical repair applications.

## ELRT 2001 Credits: 3

### Intro to Computer Hardware Total Hours: 70

Students will be introduced to various computer hardware components. Topics include the terminology associated with computer systems and peripherals. Learners will be provided with the opportunity to install components, connect peripherals, and configure computer systems using operational and safety procedures.

## ELRT 2002 Credits: 3

### Mobile Device Repair Total Hours: 70

Students will be introduced to a variety of mobile devices, including tablets, smartphones and audio and video players. Topics include the terminology associated with mobile device components as well as bench testing techniques. Learners will be provided with the opportunity to test and configure a variety of mobile devices using operational and safety procedures.

## ELRT 2003 Credits: 3

### LCD Monitor and TV Repair Total Hours: 70

Students will be introduced to LCD monitor and television troubleshooting and repair concepts.

## ELRT 2004 Credits: 6

### Technical Skills 3 Total Hours: 150

Learners will reinforce theory provided by performing repairs on a variety of products including but not limited to: televisions, tablets, mobile phones, monitors, and desktop and laptop computers. Focus will be on hands-on troubleshooting, disassembly, part replacement and repair validation.

## ELRT 2100 Credits: 3

### Business Mathematics Total Hours: 60

This course introduces basic business mathematics used in commerce and industry. Students develop skill in using basic arithmetic functions and algebraic equations to solve practical financial and mathematical problems encountered in business. Problems relating to retail operations, discounts, simple and compound interest and annuities are used to contextualize mathematical applications.

## ELRT 2101 Credits: 3

### The Canadian Economy Total Hours: 85

This course will examine both micro and macro economic topics within the context of the Canadian economy. Students will focus on gaining a broad understanding of economic theory and its application to contemporary Canadian economic issues including the impact of free trade agreements and the rapid growth of Canada's Indigenous community as a driver of the economy.

**ELRT 2102 Credits: 3**

**Principles of Management Total Hours: 60**

This course involves detailed study of management principles, concepts and techniques. Students will examine applications and problems from actual business cases and focus on management practices that can be applied in a regional, national or global environment.

**ELRT 2103 Credits: 3**

**Comm in the Canadian Workplace Total Hours: 60**

This course is intended to introduce students to the theories and practices of contemporary communications in the Canadian workplace. Attention will be devoted to the ethical and relational implications of communication in the workplace as well as the development of clarity in communications. Written assignments will include letters, memoranda, resumes and reports and visual presentations.

**ELRT 2104 Credits: 3**

**Organizational Behaviour Total Hours: 60**

This course focuses on individual, group, and organizational behaviour. The course is designed to help students develop an understanding of organizational behaviour theory as it applies in the business workplace. Students will learn skills and techniques to help organizations function more effectively and efficiently.