

## **Attention Competitors**

**At the 2005 Provincial Skills Competition  
Safety is # 1**

**Each Event Area Will Have Safety Equipment  
and Requirements That Competitors Must  
Adhere To**

**Important Must Read!!!!**

**Competitors Must Meet All Safety Requirements  
To Compete At The Provincial Skills Competition**

**Please Consult The Scope Document To  
Determine The Safety Requirements For Your  
Area**

**It Is Recommended That Competitors Check The  
Scope Document To Ensure You Meet All Safety  
Requirements**

**Scope Documents May Be Updated Until January  
15th**

# 2005 Provincial Skills Competition

## Scope Document

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<b>EVENT:</b> ELECTRONICS	<b>LEVEL:</b> POST SECONDARY
<b>START TIME:</b> 8:00 AM. APRIL 8 <sup>TH</sup> , 2005	<b>LOCATION:</b> SIAST PALLISER CAMPUS RM. 4.122.08
<b>INTERNATIONAL TRADE #:</b> 16	<b>DURATION:</b> 6 HRS.

**SAFETY REQUIREMENTS:** Competitors are required to follow all industry safety standards during the competition.

### **PURPOSE OF THE CHALLENGE:**

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of electronics technology.

### **SKILLS AND KNOWLEDGE TO BE TESTED:**

Each competitor will be tested in the following areas:

Theory 15% Practical 85%

The competition will cover the theoretical and practical aspects of current state of the art electronic industry standards. The competitor may be asked to demonstrate abilities in the following areas:

- Interpret electronic schematic diagrams, pictorials, manufacturer's technical specifications and supplier catalogues.
- Identify common electrical and electronic components.
- Construct, analyse and troubleshoot DC circuits including series resistance, series parallel resistance and solid state switching.
- Construct, analyse and troubleshoot AC circuits including capacitive, inductive and complex RLC circuits.
- Construct, analyse and troubleshoot analog circuits including discrete amplifiers, operational amplifiers and comparator circuits.
- Construct, analyse and troubleshoot digital circuits including TTL/CMOS gates, timers, and optical devices.
- Hand solder components on a printed circuit board to acceptable industry standards.
- Hand de-solder through hole mount components on a printed circuit board.
- Set-up and demonstrate use of common electronic measuring equipment including multimeters, power supply, function generator and oscilloscope, frequency meter.
- Troubleshoot simple electronic circuits having a preinstalled fault.
- Reverse Engineer a simple electronic circuit.

### **EQUIPMENT AND MATERIALS:**

*Supplied by the Committee:*

- Bench equipment
- Dual Power Supply 0 to +/- 15 volts @ 1 amp
- Digital Multimeter
- Projects and Documentation

***Supplied by the Competitor:***

- Calculator, pencils, pens, erasers
- Safety glasses – not required if prescription glasses are worn
- 2 – Breadboards, minimum size each 2” x 6” (wire will be supplied)
- Hand Tools: 25 watt Solder Iron, Stand, Tip cleaner, tips of choice. Butane solder devices will not be allowed.
- Hand vacuum extractor or Solder wick
- Long nose pliers
- Side cutters
- Wire stripper
- Screwdrivers: slot, Philips
- “Third Hand” including magnifying glass
- Power bar, 4 or more outlet

**The Technical Committee will inspect other tools for suitability**

**CLOTHING REQUIREMENTS:**

***Competitor Must Provide:***

Competitors are to be dressed in a clean and appropriate manner.

No jewellery on hands or wrists.

Competitors will be allowed to listen to music from a personal CD or Tape player during the competition. Only original recordings will be acceptable.

**JUDGING CRITERIA**

Point Breakdown:

The following descriptors will be used:

Perfect =	10	Medium =	5
Very Good =	9	Weak =	4
Good =	8	Insufficient =	3
Rather Good =	7	Bad =	2
Sufficient =	6	Very Bad =	1
		Zero =	0

**ADDITIONAL NOTES:**

In the event of a tie in the competition, the tie will be broken by the mark achieved on the following project sections:

- Construction project
- Troubleshooting assignment
- Reverse engineering assignment
- Current competition documents will be available to the competitor only at the time of competition.
- Safety glasses must be worn for the soldering/desoldering project.

**COMMITTEE MEMBERS:**

Doug Weimer      SIAST Palliser Campus, Moose Jaw