

**2017 MICHIGAN SKILLS USA CHAMPIONSHIPS
TASK AND MATERIALS LIST**

SKILL OR LEADERSHIP AREA: _____ Electrical Construction Wiring _____

CONTEST LOCATION:

DeVos Place
303 Monroe Ave NW
Grand Rapids, MI 49503
616.742.6500
<http://devosplace.org/>

RESUME:

Each student must submit a one-page printed resume before the contest start at the contest site (present to contest coordinator, not judges). The resume is no longer submitted online. This is the only time that resumes can be turned in. Failure to do so will result in a 10 point penalty.

TASKS TO BE PERFORMED:

- Answer questions to written test regarding SkillsUSA knowledge.
- Install the electrical materials as per the supplied drawings

SCOPE OF PROJECT:

- Take written test – 30 minutes, go over answers.
- Install a doorbell system as per the drawing.
- Mount electrical equipment as shown on the drawing.
- Install Non-Metallic Sheath Cable and wire circuits containing 3-way and 4-way switching for the luminaire.
- Install Non-Metallic Sheath Cable and wire circuits for the receptacles and the single pole switch as per the notes on the drawing.
- Install the MC cable as shown on the drawing.
- Bend and mount conduit as per the drawing.

STUDENTS MUST SUPPLY:

- Resume – 1 page
- Calculator
- Hammer
- Screwdrivers (Regular and Phillips)

- Needle nose pliers
- Wire strippers
- Non-Metallic Sheath Cable strippers
- Crimp tool for splice caps
- Diagonal wire cutters
- Electrical side cutting pliers
- Tool pouch and belt
- 6' rule or tape measure
- **Approved Safety hard hat**
- **Safety glasses with side shields or goggles**
- ½" EMT conduit hand bender (thin wall)
- Torpedo level
- MC cutter
- Hack saw frame & blade
- #2 pencil
- Voltage tester
- Continuity tester
- Cordless drill/screwdriver
- Conduit reamer
- ½" spade/paddle
- National Electrical Codebook 2011 (**no hand books**)
- Knife
- Key hole saw
- Materials must be supplied by the contestant (list to follow)

NOTE:

- Conduit box kickers are NOT allowed.
- Judges reserve the right to deny use of any tools not on this list.
- Do not borrow tools from others.
- Each student will be scored on a **clean and safe work space**.

DRESS CODE:

- Leather work boots or shoes (no athletic shoes)
- Appropriate work attire.

Revised 11/28/16

Electrical Construction Wiring Skills USA Contest

Materials List to be provided by **each** contestant

1 – 4 x 2 1/8" square box with 1/2" k.o. with side mount bracket

1 – 4" square plaster or mud ring, single device with 1/2" rise

3 – 4 x 2 1/8" square box with 1/2" k.o.

3 – 2-gang plastic nail-on box

3 – single-gang plastic nail-on box

2 – round plastic nail-on box

2 – 15a/ 125v single pole switch

2 – 15a/ 125v three-way switch

2 – 15a/ 125v four-way switch

2 - 2 – 15a/ 125v duplex outlet (TR)

2 – 15a/ 125v gfci outlet (TR)

2- Plastic keyless light fixtures

4 – 1/2" Romex Connectors

6 – 1/2" EMT set screw connectors

6 – 1/2" EMT one hole straps

2 – MC Cable connectors with anti-short bushing

Sheet-metal screws to install boxes and straps

Green ground screws

Romex staples

Assorted wire-nuts (Yellow/ Red/ Grey/ Blue) Ideal or 3M or equivalent.

1 – Chime Kit that includes

1. transformer that can be installed in service pane
2. 2 – pushbuttons
3. Mounting hardware/ screws

15 ft. of 18/2 bell wire with Staples for 18/2 bell wire, Wire-nuts for 18/2 bell wire

Electrical Construction Wiring Scoring Rubric

	Exceeds industry standards and quality.			Meets industry standards and quality			Acceptable performance			Unacceptable performance			
Safety	100		80	70		60	50		40	30		0	Score
	Works at a deliberate pace, aware of others around them and their safety, follows all safety requirements.			Follows safety requirements is unaware of others in the area.			Follows most safety requirements, has an occasional lapse in safe working procedures.			Unsafe working practices, is a danger to self or others in the immediate area.			
Wiring Diagram	100		80	70		60	50		40	30		0	Score
	Diagram is correct, all symbols drawn correctly, lines are straight and connected at both ends, all lettering is neat with correct spelling.			Diagram may exhibit one of the following faults. Generally correct but not accurate, poor penmanship/symbol representation, lines not straight and at right angles, some words spelled incorrectly.			Diagram may exhibit two or three of the following faults. Generally correct but not accurate, poor penmanship/symbol representation, lines not straight and at right angles, some words spelled incorrectly.			Diagram is illegible, circuit will not work, symbols drawn incorrectly. Contestant shows no grasp of wiring diagram procedures.			
Wiring application	100		80	70		60	50		40	30		0	Score
	Proper size conductors, proper romex color code, all connections tight. Proper connection, wire terminations to components, proper wire splicing. Contestant understands the circuit and component operation.			One of the following conditions present; conductors may not be correct size or color, connections tight. Proper connection, wire terminations to components, proper wire splicing. Contestant requires guidance to connect component.			Two or three of the following conditions; conductors may not be correct size or color, connections tight. Proper connection, wire terminations to components, proper wire splicing. Contestant requires guidance to connect component.			Several of the following conditions; conductors may not be correct size or color, connections tight. Proper connection, wire terminations to components, proper wire splicing. Contestant requires guidance to connect component.			
Workmanship	100		80	70		60	50		40	30		0	Score
	No infractions concerning components mounted level, secure and in proper location, wires neat and			One infraction of any of the following conditions; components mounted level, secure and in proper location, wires neat			Two or three infractions of the following conditions; components mounted level, secure and in proper location, wires neat			Multiple errors exist; components mounted level, secure and in proper location, wires neat and orderly with			

	orderly with proper bends, romex stapled properly to code.			and orderly with proper bends, romex stapled properly to code.			and orderly with proper bends, romex stapled properly to code.			proper bends, romex stapled properly to code.			
NEC/written test	100		80	70		60	50		40	30		0	Score
	Entire project meets code compliance, no violations or wrong answers on test.			One code violation/two wrong answers on test.			Two or three code violations/3-4 wrong answers on test.			Multiple code violations/more than 4 wrong answers on test.			
Correct operation	100		80	70		60	50		40	30		0	Score
	Project works correctly the first time. Or if not operational, component issues not the fault of the contestant will not deduct from score.			Project does not work correctly on the first power up, student troubleshoots the problem with no assistance.			Project requires two attempts to correct the problem, assistance may be utilized.			Contestant is unable to correct the problem, has no working knowledge of the circuit.			
Raceway	100		80	70		60	50		40	30		0	Score
	All raceways correct length to within 1/8 th inch, bends are to the correct angle, bends are at the correct placement in the raceway. No kinks or damage to the raceway.			Raceway may contain one of the following; correct length to within 1/8 th inch, bends are to the correct angle, bends are at the correct placement in the raceway. No kinks or damage to the raceway.			Raceway may contain two or three of the following; correct length to within 1/8 th inch, bends are to the correct angle, bends are at the correct placement in the raceway. No kinks or damage to the raceway.			Raceway may contain several of the following; correct length to within 1/8 th inch, bends are to the correct angle, bends are at the correct placement in the raceway. No kinks or damage to the raceway.			
Resume	100		80	70		60	50		40	30		0	Score
	Purpose and format of the resume is strong and clear. Resume is professional in appearance, tone, and style. Proper writing mechanics present.			Purpose and format is present but could be stronger. Resume shows an appropriate appearance. Some inconsistencies remain. Writer follows most writing guidelines.			Purpose and format is less clear, and weak parts remain. Format is confusing. Major sections are missing. Resume shows a less professional appearance, multiple errors.			Purpose and format is not clear. Format is hard to see. Major sections are missing information. Numerous errors, document is unreadable			

Interview	100		80	70		60	50		40	30		0	Score
	No infraction to the following: Contestant introduced themselves with a firm handshake and eye contact, maintained posture, and grooming, has mature answers to all questions, has knowledge of position applied.			One to two infractions of the following: Contestant introduced themselves with a firm handshake and eye contact, maintained posture, and grooming, has mature answers to all questions, has knowledge of position applied.			Three to four infractions of : Contestant introduced themselves with a firm handshake and eye contact, maintained posture, and grooming, has mature answers to all questions, has knowledge of position applied.			Multiple infractions of: Contestant introduced themselves with a firm handshake and eye contact, maintained posture, and grooming, has mature answers to all questions, has knowledge of position applied.			
	100			70		60	50		40	30		0	Score
Total Score													

Michigan Skills USA Electrical Construction Wiring competition scoring rubric													
Contestant #	Exceeds industry standards and quality.			Meets industry standards and quality			Acceptable performance			Unacceptable performance			Score
Safety	100		80	70		60	50		40	30		0	
Wiring diagram	100		80	70		60	50		40	30		0	
Wiring application	100		80	70		60	50		40	30		0	
Workmanship	100		80	70		60	50		40	30		0	
NEC	100		80	70		60	50		40	30		0	
Correct operation	100		80	70		60	50		40	30		0	
Raceway	100		80	70		60	50		40	30		0	
Project presentation	100		80	70		60	50		40	30		0	
Resume	100		80	70		60	50		40	30		0	
Interview	100		80	70		60	50		40	30		0	
Total													

Notes
