

# ENSC 220

## Fall 2025

### Lab 1

Due: Sunday, September 28, 2025

Group members:

1. Name:

Student No.

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2. Name:

Student No.

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3. Name:

Student No.

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Each Lab group submits one completed worksheet based on the instructions given in Lab 1.

# Lab 1: Verification of KVL and KCL Worksheet

DMM accuracy		
Voltage	Current	Resistance
<input type="text"/>	<input type="text"/>	<input type="text"/>

Resistor values				
	Nominal		Measured	
R1	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>
R2	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>
R3	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>

### KVL

Expected (based  
on measured  
resistance and  $V_{in}$ )

Measured

$V_{in}$ (nominal)	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>
$V_{R1}$	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>
$V_{R2}$	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>

### KCL

Expected (based  
on measured  
resistance and  $V_{in}$ )

Measured

$I_{R1}$	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>
$I_{R2}$	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>
$I_{R3}$	<input type="text"/>	<input type="text"/>	$\pm$	<input type="text"/>

## Discussion:

Show how equipment accuracy and measurement errors propagate through the expressions and affect the expected value of  $V_{R1}$ .

Explain how the measurement process affects the resistances, voltages, and currents that you are measuring (one or two sentences and/or a diagram).