UNIVERSITY OF ALASKA FAIRBANKS

COLLEGE OF ENGINEERING AND MINES

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

COURSE CODE	EE F102 F01 (CRN: 34544)		
COURSE NAME	INTRODUCTION TO ELECTRICAL AND COMPUTER ENGINEERING		
SEMESTER	SPRING	**YEAR**	2022
LABORATORY LOCATION	ELIF 331 (ELECTRONICS LAB)		
LAB SESSION DATE AND TIME	MONDAY 31 JAN 2022		
TYPE OF SUBMISSION	LABORATORY REPORT	**NUMBER OF SUBMISSION**	2
TITLE OF SUBMISSION	MEASURING VOLTAGE AND CURRENT		
METHOD OF SUBMISSION	ONLINE TO: maher.albadri@alaska.edu		
DUE DATE OF SUBMISSION	MONDAY 07 FEB 2022	**DUE TIME OF SUBMISSION**	23:59

STUDENT NAME	Jacob Guenther

MAKE THIS FORM A "COVER PAGE" FOR YOUR REPORT SUBMISSION.

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REMARKS:

1 Objective

The goal of this lab is to gain more experience using a multimeter while exploring some of the properties of a linear voltage regulator. In it we use a multimeter to measure node and differential voltage. Then we break the circuit to measure current. Finally we compare our measured results to a simulation of the circuit.

2 Equipment

- Agilent 34410A Multimeter
- Agilent E354xA Dual Output Power Supply
- Prototyping Board
- Linear Voltage Regulator
- Resistors
- Capacitor
- Jumpers

3 Setup

The circuit used in this lab is shown in figure 1.

4 Observations and Results

Node Voltage V_A	**Node Voltage V_B**	**Differential Voltage V_{AB}**	**Current Through 1 kΩ**	**Differential Voltage Calculated $V_A - V_B$**	**Calculated Resistance**
1.5	0.00020238				
2.0	0.669				
2.5	1.189				
3.0	1.611				
3.5	2.096				
4.0	2.583				
4.5	3.072				
5.0	3.563				
5.5	4.0563				
6.0	4.53				
6.5	4.924				
7.0	5.067				
7.5	5.069				
8.0	5.07				
8.5	5.066				
9.0	5.069				

Table 1: Displays the measured node and differential voltages, and current, as well as calculated differential voltage and resistance.

5 Conclusion

5.1 Sources of Error

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6 References

[1] Denise Thorsen, Maher Al-Badri, INTRODUCTION TO ELECTRICAL AND COMPUTER ENGINEERING, University of Alaska Fairbanks, 2022.