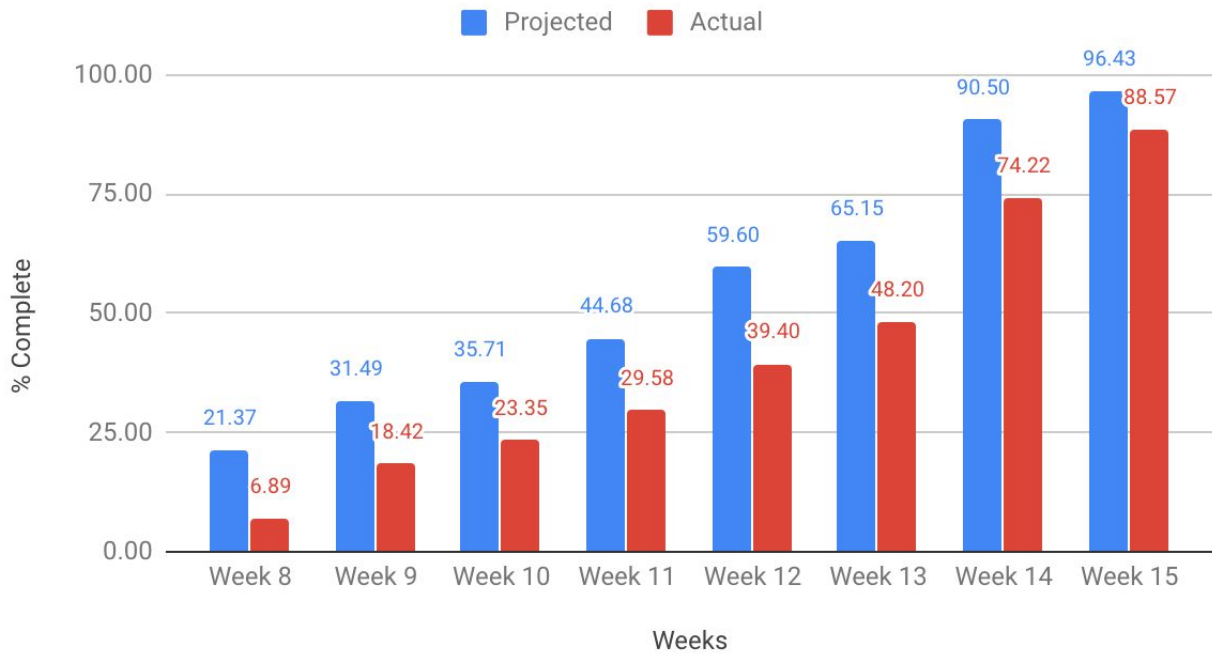


Project Status Letter Week 15  
Covering Period from 12/3/2018 to 12/10/2018  
Prepared by Alex Kmetz and Katie Lee

**DYNO Integration Action Tracking**

Projected and Actual Dyno Integration



Task / Item	In Progress Projected (%)	In Progress Actual (%)	Complete	Dependencies
Motor Spinning in Dyno Room	75.00%	75.00%	No	Motor Purchased Motor Controller Purchased Pulley / Shaft Fabricated Motor Installed in Motor Mount MCS Installed in Fixture Pulley / Shaft Connected to Motor
Motor Purchased	100%	100%	Yes	
Motor Controller Purchased	100%	100%	Yes	
Motor Controller Connected to TSI, Cooling, and Motor in Dyno Room	100.00%	83.33%	No	Motor Controller Purchased MCS / TSI / Cooling Fixture Fabricated TSI Board Complete TSI Mounting Plate Complete
Motor Mount Fabricated	100%	100%	Yes	
Motor Installed in Motor Mount in Dyno Room	100.00%	100.00%	Yes	Motor Purchased Motor Mount Fabricated
Pulley / Shaft Fabricated	80%	60%	No	
Pulley / Shaft Connected to Motor and Mounted in Dyno Room	90.91%	72.73%	No	Motor Purchased Pulley / Shaft Fabricated
MCS / TSI / Cooling Fixture Fabricated	100%	100%	Yes	
Dyno Room Testing Plan Complete	100%	100%	Yes	
Dyno Room Wiring Diagram Complete	100%	100%	Yes	
GLV Board Manufactured	100.00%	100.00%	Yes	
GLV Mounting Plate Manufactured	100.00%	100.00%	Yes	
Safety Loop Testing Panel Mounted in Dyno Room Rack	100%	100%	Yes	
Safety Loop Functional In Dyno Room	100%	100%	Yes	GLV Board Manufactured
TSI Board Manufactured	100.00%	92.31%	No	
TSI Mounting Plate Manufactured	100.00%	100.00%	Yes	
TSI Throttle / Brake Control Panel Manufactured	100.00%	100.00%	Yes	TSI Board Manufactured TSI Mounting Plate Manufactured
Cooling Loop Filled with Water and Tested For Leaks	100.00%	100.00%	Yes	

Cooling System Mounted on Fixture in Dyno Room	100%	100%	Yes	MCS / TSI / Cooling Fixture Fabricated
Cooling System Connected to MCS and Motor in Dyno Room	100%	100%	Yes	MCS / TSI / Cooling Fixture Fabricated
Cooling System Connected to TSI in Dyno Room	100.00%	80%	No	
SCADA Recording Data and Writing to a File	100.00%	71%	No	
SCADA Displaying Data to Rack Monitor in Dyno Room	75%	75%	No	
SCADA Communicating with GLV in Dyno Room	100%	100%	Yes	GLV Board and Mounting Plate Integrated
SCADA Communicating with TSI in Dyno Room	75%	75%	No	TSI Board and Mounting Plate Integrated
SCADA Communicating with Motor Controller in Dyno Room	100%	75%	No	
All Connecting Wires Produced with Correct Connector Types	100%	100%	Yes	
All Subsystems fully wired in Dyno Room	100%	100%	Yes	
All Tests According to Test Plan Run in Dyno Room	100%	0%	No	

For more data, visit website using link below:

[https://sites.lafayette.edu/motorsports/files/2018/12/Week\\_14\\_DYNO\\_Progress-1-1.pdf](https://sites.lafayette.edu/motorsports/files/2018/12/Week_14_DYNO_Progress-1-1.pdf)

**Project Item Completion Chart:**

Team	Tasks Completed	Tasks Planned for Next Week	Proposed Changes	Overdue WBS Items
VSCADA	<p><b>Sam:</b> SCADA.2.1 - VSCADA and TSI Connected via CAN</p> <p>SCADA.2.2 - VSCADA Receiving Data from TSI Sensors</p> <p>SCADA.5.1 - VSCADA and Cooling System Connected via CAN</p> <p>SCADA.5.2 - VSCADA Receiving Data from Cooling System</p> <p><b>Yuqiu:</b> SCADA.2.1 - VSCADA and TSI Connected via CAN</p> <p><b>Zian:</b> SCADA.2.1 - VSCADA and TSI connected via CAN</p> <p>SCADA.2.2 - VSCADA Receiving data from TSI sensors</p> <p>SCADA.5.1 - VSCADA and Cooling System Connected via CAN</p> <p>SCADA.5.2 - VSCADA Receiving Data from Cooling System</p>	none	none	<p><b>Sam:</b> SCADA.4.3 - SCADA Outputs a Throttle Control to the Motor Controller</p>
TEST		<p><b>Hayden:</b> TEST.1.1 - Motor Testing Plan</p> <p>TEST.2.1 - GLV Testing Plan</p>	none	<p><b>Hayden:</b> TEST.1.1 - Motor Testing Plan</p> <p>TEST.2.1 - GLV Testing Plan</p>

		<p>TEST.3.1 - TSI Testing Plan</p> <p>TEST.4.1 - TSV Testing Plan</p> <p>TEST.5.1 - SCADA Testing Plan</p> <p>TEST.6.1 - DYNO Integration Testing Plan</p> <p><b>Katie:</b> TEST.6.2 - Full DYNO Risk Assessment</p>		<p>TEST.3.1 - TSI Testing Plan</p> <p>TEST.4.1 - TSV Testing Plan</p> <p>TEST.5.1 - SCADA Testing Plan</p> <p>TEST.6.1 - DYNO Integration Testing Plan</p> <p><b>Katie:</b> TEST.6.2 - Full DYNO Risk Assessment</p>
GLV	<p><b>Max:</b> GLV.1.7 - GLV BoB Installed on Mount in Rack in Dyno Room</p> <p>GLV.3.6 - Demo of Left Side Panel Closing / Opening Safety Loop</p> <p>GLV.3.7 - Demo of Right Side Panel Closing / Opening Safety Loop</p> <p>GLV.3.8 - Demo of Safety Loop shutting off the Dyno Power Supply from Safe Distance</p> <p>GLV.3.9 - Demo of Dashboard Panel Closing / Opening Safety Loop</p> <p>GLV.3.10 - Demo of Dashboard Panel Putting Car / Dyno into Drive Mode</p> <p>GLV.5.5 - Pi2CAN GPIO Board</p>	none	none	none

	<p>Installed on Pi / GLV Mount</p> <p>GLV.5.6 - Pi2CAN GPIO Board tested with CAN Shield for all GPIO Pin Functionality</p> <p>GLV.5.7 - RTC Attached to GPIO Board and is Accessible by SCADA</p> <p>GLV.7.3 - GLV Dashboard Display Installed</p> <p>GLV.7.4 - GLV Dash Display Tested and Approved</p> <p><b>Robson:</b>  GLV.3.6 - Demo of Left Side Panel Closing / Opening Safety Loop</p> <p>GLV.3.7 - Demo of Right Side Panel Closing / Opening Safety Loop</p> <p>GLV.3.8 - Demo of Safety Loop shutting off the Dyno Power Supply from Safe Distance</p> <p>GLV.3.9 - Demo of Dashboard Panel Closing / Opening Safety Loop</p> <p>GLV.3.10 - Demo of Dashboard Panel Putting Car / Dyno into Drive Mode</p>			
<p>TSI</p>	<p><b>Antonio:</b>  TSI.5.8 - TSI ICD Delivered</p> <p>TSI.5.9 -</p>	<p><b>Tianyu:</b>  TSI 1.10 - TSI PCB Debugged and Complete</p>	<p>none</p>	<p><b>Tianyu:</b>  TSI.6.1 - Mechanical Drawing of TSI Enclosure Delivered and</p>

	<p>TSI Wiring Diagram Delivered</p> <p><b>Katie:</b> TSI.1.6 - TSI PCB Populated and Verified</p> <p><b>Tianyu:</b> TSI.1.13 - TSI Installed on Mount in Dyno Room</p> <p>TSI.4.8 - TSI Base Plate Installed in Dyno Room</p> <p>TSI.5.1 - TSI and MCS Connected</p> <p>TSI.5.2 - TSI and Test Panel Connected</p> <p>TSI.5.3 - TSI and GLV Connected</p> <p><b>Xiaonan:</b> TSI.1.6 - TSI PCB Populated and Verified</p> <p>TSI.1.7 - IMD Installed on TSI PCB</p> <p>TSI.1.13 - TSI Installed on Mount in Dyno Room</p> <p>TSI.5.6 - TSI and Cooling Connected</p> <p><b>Yuqiu:</b> TSI.1.6 - TSI PCB Populated and Verified</p> <p>TSI.2.9 - VSCADA I2C Communication Complete</p>	<p><b>Yuqiu:</b> TSI 1.10 - TSI PCB Debugged and Complete</p> <p><b>Xiaonan:</b> TSI 1.10 - TSI PCB Debugged and Complete</p>		<p>Approved</p>
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	TSI.2.11 - CANBus / TSI Integration Complete			
TSV		<p><b>Hayden:</b> TSV.1.2 - Pack Mechanical Drawing Submitted and Accepted</p> <p>TSV.3.1 - PackMan Block Diagram Delivered and Approved</p> <p>TSV.3.2 - PackMan Circuit Schematic Delivered and Approved</p> <p><b>Yishak:</b> TSV.1.1 - Pack High Level Electrical Block Diagram Delivered and Accepted</p> <p>TSV.1.3 - Pack BoM Purchase Order Approved and Purchased</p> <p>TSV.4.1 - SegMan Block Diagram Delivered and Approved</p> <p>TSV.3.1 - PackMan Block Diagram Delivered and Approved</p> <p><b>Weston:</b> TSV.3.1 - PackMan Block Diagram Submitted and Approved</p> <p><b>Alex:</b> TSV.3.1 - PackMan Block Diagram Delivered</p>	none	<p><b>Alex:</b> TSV.3.1 - PackMan Block Diagram Delivered</p> <p><b>Hayden:</b> TSV.4.1 - PackMan Block Diagram Delivered and Approved</p> <p>TSV.4.2 - PackMan Circuit Schematic Submitted and Accepted</p> <p><b>Yishak:</b> TSV.1.1 - Pack High Level Electrical Block Diagram Delivered and Accepted</p> <p>TSV.1.3 - Pack BoM Purchase Order Approved and Purchased</p> <p>TSV.2.1 - CellMan Block Diagram Delivered and Approved</p> <p>TSV.2.4 - CellMen BoM Purchase Order Approved and Purchased</p> <p>TSV.4.1 - SegMan Block Diagram Delivered and Approved</p> <p><b>Weston:</b> TSV.1.2 - Pack BoM Purchase Order Approved and Purchased</p>



				TSV.1.6 - Pack Testing Plan Submitted and Approved  TSV.3.1 - PackMan Block Diagram Delivered
Cooling	<p><b>Hongbo:</b> COOL.3.1 - Cooling System Loop Connected to the Motor Controller</p> <p>COOL.3.3 - Demo of cooling loop passing water through all of the connected items</p> <p>COOL.4.1 - Cooling ICD Delivered</p> <p>COOL.4.3 - Cooling Wiring Delivered and Accepted</p> <p>COOL.5.2 - Communication Implemented Between Cooling and SCADA</p> <p>COOL.5.4 - Demo of Communication Capabilities</p> <p><b>Weston:</b> COOL.2.3 - Cooling System Mounted on Fixture in Dyno Room</p> <p>COOL.3.1 - Cooling System Loop Connected to the Motor Controller</p> <p>COOL.3.3 - Demo of cooling loop passing water through all of the connected items</p> <p>COOL.4.5 - Cooling</p>	none	none	none

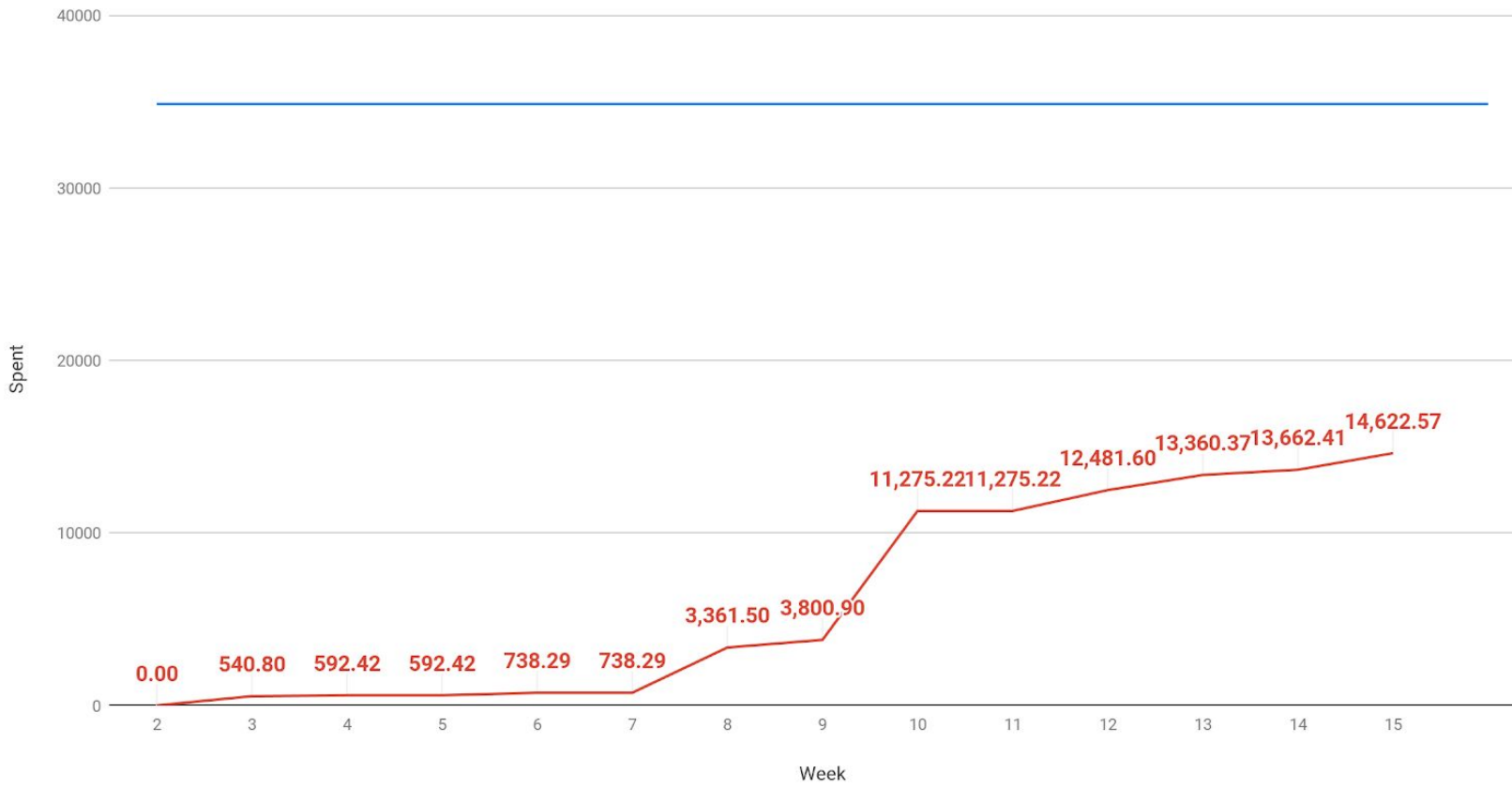
	<p>Connected to VSCADA via CAN</p> <p>COOL.4.6 - Cooling Connected to GLV</p>			
Interconnect	<p><b>Drew:</b> WIRE.3.1 - TSI - MCS Connected</p> <p>WIRE.3.2 - TSI - Cooling Connected</p> <p>WIRE.3.3 - TSI - Pedal Throttle Fixture Connected</p> <p><b>Weston:</b> WIRE.3.13 - Cooling System and Motor Connected</p> <p>WIRE.3.14 - Cooling System and MCS Connected</p>	<p><b>Hayden:</b> WIRE.2.3 - TSI-MCS Wires Complete</p> <p>WIRE 3.12 - Safety Loop Panels - Dyno Supply Wires Complete</p>	none	none
Mech		none	none	none
Management	<p><b>Katie:</b> Finish testing</p> <p>Deliver project deliverables</p> <p>Prepare for CDR</p> <p><b>Weston:</b> Project video</p> <p><b>Robson:</b> Prepare budget for CDR</p>	<p><b>Alex:</b> M.1.4 - Program Submission</p> <p>M.4.4 - Posters Delivered</p> <p>Update WBS to better reflect SMART goals</p> <p><b>Katie:</b> M.4.9 - Final Report Delivered</p> <p><b>All:</b> Update WBS to better reflect SMART goals</p>	none	<p><b>Alex:</b> M.1.4 - Program Submission</p> <p>M.4.4 - Posters Delivered</p> <p>Update WBS to better reflect SMART goals</p>

**Purchasing Summary from Previous Week:**

Sub-system	Allocated Budget	Total Spent	Budget Remaining	Percentage Spent
Brakes	3,500.00	0.00	3,500.00	0.00%
Chassis/Body	5,000.00	0.00	5,000.00	0.00%
Cooling	620.00	37.64	582.36	6.07%
GLV	780.00	967.48	-187.48	124.04%
Interconnect	1,500.00	1,440.87	59.13	96.06%
Motor	4,000.00	3,823.43	176.57	95.59%
Pedal/Controls	2,000.00	0.00	2,000.00	0.00%
Steering	2,500.00	0.00	2,500.00	0.00%
Suspension	2,200.00	0.00	2,200.00	0.00%
TSI/MCS	1,500.00	4,354.11	-2,854.11	290.27%
TSV	4,187.00	1,112.84	3,074.16	26.58%
VSCADA / DYNO	525.00	87.67	437.33	16.70%
Shipping/Tax	4,246.80	498.53	3,748.27	11.74%
Registration	2,300.00	2,300.00	0.00	100.00%
Overall	34,858.80	14,622.57	20,236.23	41.95%

### Total Spent vs. Week

— Max Budget — Total Spent



## Purchase Orders:

11/27/2018		ECE Department Material Request				
Course: ECE 491 Professor: Nadovich		Req Number: 32				
Requested By Name: Robson Adem Email: ademr@lafayette.edu Phone: 4845919265		Vendor: www.mcmaster.com Web Site: www.mcmaster.com Phone: (609) 689-3000 Ship By: Ground				
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
1	1	<a href="#">6452T45</a>	100 feet 18awg 9 wire	\$145.00	\$145.00	
2	1	<a href="#">6452T65</a>	100 feet 16 awg 12 wire	\$225.00	\$225.00	
3	5	<a href="#">7130K12</a>	zip tie 100 packs	\$2.41	\$12.05	
4	2	<a href="#">7565K46</a>	cable tie (25 a pack)	\$7.49	\$14.98	
5	5	<a href="#">7566K73</a>	Cable tie mount (25 a pack)	\$3.82	\$19.10	
6	2	<a href="#">5945T83</a>	lables 1-45 (10 of each)	\$19.83	\$39.66	
7	4	<a href="#">96144A120</a>	Fine-Thread Alloy Steel Socket Head Screw M6 x 0.75 mm Thread, 20 mm Long 96144A120	\$3.38	\$13.52	
					Shipping Fees	\$7.00
					Grand Total:	\$476.31
Instructor Approval:						
Department Approval: (Over \$500)						

DATE:11/27/2018		ECE Department Material Request				
Course: ECE 491 Professor: Nadovich		Req Number: 33				
Requested By Name: Robson Adem Email: ademr@lafayette.edu Phone: 4845919265		Vendor: Dig-Key Web Site: digikey.com Phone: 1 (800) 858-3616 Ship By:				
All items added to shopping cart :		<a href="https://www.digikey.com/short/jlc33m">https://www.digikey.com/short/jlc33m</a>				
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
1	1	Z1032-ND	RELAY GEN PURPOSE 4PST 25A 24V	46.9	\$46.90	
2	1	Z1238-ND	W-BRACKET FOR OMRON RELAY	2.1	\$2.10	
3	6	WM2906-ND	CONN HOUSING 8POS .100 W/LATCH	0.43	\$2.58	
4	3	WM3704-ND	CONN RECEPT 10POS DUAL	0.48	\$1.44	
5	4	WM3701-ND	CONN RECEPT 4POS DUAL	0.31	\$1.24	
6	6	WM3703-ND	CONN RECEPT 8POS DUAL	0.43	\$2.58	
7	3	WM3705-ND	CONN RECEPT 12POS DUAL	0.64	\$1.92	
8	10	WM3700-ND	CONN RECEPT 2POS DUAL	0.256	\$2.56	
9	6	WM3802-ND	CONN HEADER 6POS 4.2MM VERT TIN	1.06	\$6.36	
10	100	RHM1.00KAECT-ND	RES SMD 1K OHM 1% 04W 0805	0.0572	\$5.72	
11	25	WM2512-ND	CONN TERM FEMALE 22-24AWG GOLD	0.1416	\$3.54	
12	100	WM2501CT-ND	CONN TERM FEMALE 18-24AWG TIN	0.0555	\$5.55	
					Shipping Fees	
					Grand Total:	\$82.49
Instructor Approval:						
Department Approval: (Over \$500)						

DATE:11/30/2018		ECE Department Material Request				
Course: ECE 491 Professor: Nadovich		Req Number: 34				
Requested By Name: Robson Adem Email: ademr@lafayette.edu Phone: 4845919265		Vendor: Dig-Key Web Site: digkey.com Phone: 1 (800) 858-3616 Ship By:				
All items added to shopping cart :		<a href="https://www.digikey.com/short/j188dc">https://www.digikey.com/short/j188dc</a>				
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
1	250	WM11981CT3ND	CRIMP TERM TIN 14/16AWG	0.15908	\$38.27	
2	250	WM2512-ND	CONN TERM FEMALE 22-24AWG GOLD	0.10169	\$25.42	
3	250	WM2501CT3ND	CONN TERM FEMALE 18-24AWG TIN	0.04784	\$11.96	
4	250	1734-1143-1-ND	CONTACT PIN 16-20AWG CRIMP NICKL	0.17184	\$42.96	
5	250	1734-1161-1-ND	CONTACT SKT 16-20AWG CRIMP NICKL	0.3442	\$86.05	
6	5	296-29034-1-ND	IC MONITOR,PWR,CURR,BIDIR,10MSOP	2.88	\$14.40	
				Shipping Fees		
				Grand Total:	\$219.06	
Instructor Approval:						
Department Approval:						
(Over \$500)						

11/30/2018		ECE Department Material Request				
Course: ECE 491 Professor: Nadovich		Req Number: 35				
Requested By Name: Robson Adem Email: ademr@lafayette.edu Phone: 4845919265		Vendor: www.mcmaster.com Web Site: www.mcmaster.com Phone: (609) 689-3000 Ship By:				
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
1	1	<a href="#">8010K31</a>	Elongated Ring Terminals Nylon Insulated, 22-18 Gauge, for Number 2, 4, 6 Screw Size Pack of 25 each	\$6.10	\$6.10	
2	1	<a href="#">91841A007</a>	18-8 Stainless Steel Hex Nut Pack of 100 each	\$3.40	\$3.40	
3	1	<a href="#">9388K57</a>	Heavy Duty Ring Terminals Vinyl Insulated, for 16-14 Gauge and 7/16" Screw Size Pack of 10 each	\$4.90	\$4.90	
4	1	<a href="#">9910T66</a>	Garolite Sheet 6" Wide x 6" Long, 3/8" Thick	\$27.89	\$27.89	
5	1	<a href="#">9246K562</a>	6061 Aluminum 3/4" Thick, 4" x 48"	\$104.94	\$104.94	
6	1	<a href="#">92395A112</a>	Screw-to-Expand Inserts for Plastics, Brass, 4-40 Thread Size Pack of 50 each	\$11.00	\$11.00	
7	1	<a href="#">8010K33</a>	Elongated Ring Terminals Nylon Insulated, 16-14 Gauge, for Number 2, 4, 6 Screw Size Pack of 25 each	\$8.56	\$8.56	
				Shipping Fees	\$7.00	
				Grand Total:	\$173.79	
Instructor Approval:						
Department Approval:						
(Over \$500)						

		11/30/2018				
		ECE Department Material Request				
	Course: ECE 491 Professor: Pro. Nadovich			Req Number:36		
Requested By Name Robson Adem Email ademr@lafayette.edu Phone 4845919265				Vendor: Web Site Phone Ship By:	Amazon amazon.com 5105252328	
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
	1	<a href="https://amzn.to/2KIB90w">https://amzn.to/2KIB90w</a>	pipe coupling	\$6.49	6.49	
	2	<a href="https://amzn.to/2PbQXcS">https://amzn.to/2PbQXcS</a>	pipe fitting adapter	\$6.99	13.98	
				Shipping Fees	\$0.00	
				Grand Total:	\$20.47	
	Instructor Approval:					
	Department Approval: (Over \$500)					