AME 20216 – Lab Report Score Sheet

A6 and A7 – Solar Panels
NDID#:_____

Lab Section (Day/time): _____

General Requirements (12 points)

Item and Description	Points Awarded	Possible Points
Overall quality of writing (spelling, grammar, readability, captions, and discussion)		6
Format and Technical Elements (font, margins, page numbers, score sheet, heading, abstract/summary, findings, conclusion, numbered equations, variables, figures, tables, captions and references)		6
TOTAL		12

Overall quality of writing – The student must clearly explain the procedure and *discuss* the results using college-level English.

- Write it second person passive voice. No first-person narratives!
- Avoid long-winded descriptions of the experimental method.
- Focus on discussing the results per the suggested talking points in the lab handout.

Format

- Use a 12 point "serifed" font such as Times New Roman.
- Document should be double-spaced.
- Document should have 1" margins in all directions.
- Page numbers are required centered at bottom of page.
- Equations must be numbered.
- All variables must be italicized.
- All variables in an equations must be defined (i.e. "where *c* is the speed of sound").
- Plots should always have axes clearly labeled with units.
- Plots should always be centered with captions beneath labeled Fig. 1, etc.
- Tables should always be centered with captions above labeled Table 1, etc..
- Captions should be the same font as the rest of the document.

References – The report must include 2 references. These can be data sheets from the lab website, articles from the internet, the textbook, etc. References should follow the ASME format. (https://www.asme.org/shop/proceedings/conference-publications/references)

Specific Requirements for A6 and A7 (22 points)

Note that any curve fit or theoretical curve must be plotted as a *smooth, continuous* line, and the equation for said curve *must* be included as a numbered equation in the main text with all the variables defined. For more details on any of the items below, please refer to the lab handout.

Item and Description	Points Awarded	Possible Points
A6: A plot of measured power vs. load resistance for the two different Variac settings		4
A6: A plot of measured efficiency vs. load resistance for the two different Variac settings		4
A6: A table containing the irradiance, maximum power, load resistance that yielded the maximum power, and estimated internal resistance of the solar panel for the two different Variac settings		3
A7: A table containing the typical voltage, current, and power consumption for the three different devices in you independent case study		3
A7: A table summarizing your design parameters and calculations • **The irradiance in kWhrs/day/m^2 at the location** • **The percent efficiency of the solar panels** • **The size of the solar panels in m^2** • **The number of solar panels needed** • **The total average power in kWhrs/day the solar panels are expected to produce** • **The energy storage capacity of the battery** • **The number of batteries needed to store half a day's worth of energy from the panels.**		5
A7: A bill of materials (BOM) for the solar panels, batteries, and charge controller		3
TOTAL		22

***** For the case study, a bland, qualitative discussion of energy policy is NOT acceptable and will be awarded ZERO points.

OVERALL SCORE _____ / 34