Engineering 1
Student Performance-Based Assessment
Rules and Guidelines
SY 2015-2016

Event Overview:

During this year's Engineering 1 Performance-Based Assessment, student teams will create a design solution for a real-world problem based on client needs. A local client will present pertinent criteria and information to all of the student teams participating in the Engineering 1 Performance-Based Assessment. Based on the criteria presented by the client, the student teams will present their design, as well as an explanation and breakdown of the data and information used in their design decisions. Presentations will also include a PowerPoint or Keynote Presentation that will be presented at the Performance-Based Assessment event. Prior to the event, students will submit a research paper on an assigned topic. In addition, students will be taking a 50-question objective exam assessing proficiency of Industrial Engineering Technology (IET) Core standards and a 50-question objective exam assessing proficiency of Engineering 1 Cluster standards. Students should be able to demonstrate proficiency of both IET Core and Engineering 1 standards.

Rules:
- ✓ Career and Technical Education (CTE) teachers may enter more than one team. Priority participation will be given to students completing the Engineering 1 Program of Study and are seeking to receive CTE Honors. If there are extra slots, those students who have not completed a program of study may be allowed to participate.
- ✓ Each team must have two to four members.
- ✓ Each team should bring their own equipment and computers pre-loaded with the appropriate software.
- ✓ Teachers should ensure students have administrative rights necessary to load printer drivers on the laptop.
- ✓ **For teams attending the State Performance Based Assessment,** Neighbor island schools may request laptops to be provided, however, the school will be responsible for providing their own software. **The state will not be responsible for compatibility and other technical issues. Request for a laptop should be made by March 23, 2016.**
- ✓ All team members must be present during the oral presentation. A score of zero (0) will be assigned to any student that does not participate in the oral presentation; therefore the team's overall proficiency score will be affected. Exceptions will be made for family and medical emergencies with written justification.
- ✓ All team members must be dressed in appropriate professional attire (See professional attire guidelines).

Performance-Based Assessment Products:

Research Paper Component:
- ✓ ***<u>Maximum</u> Ten (10) Page Technical Writing Paper.** The paper must be received by **Monday, March 7, 2016 at 4:00 p.m.** via Lotus Notes to:

alison_inouye@notes.k12.hi.us as a **PDF file**. A half (.5) point, per day will be deducted from papers submitted after the due date and time. No word documents will be accepted due to the variation of word processing software versions and possible formatting issues that may affect the final paper.
- ✓ ***If student teams are able to present topic in under ten (10) pages, it will be acceptable.**

The topic of the technical writing paper:

Agricultural Robots
"What are current and emerging robotic technologies and applications in agriculture? What are the implications of autonomous operation or instrumental robotics in agricultural Biosystems?"

The technical writing paper should be organized to include:
- o **Title Page***:*   Title
  Name of Team Members
  Name of School
  Submission Date

- o **Table of Contents:** Components of the report should be presented with accompanying page numbers.
- o **Abstract:** one paragraph, not indented. Between 150-250 words.
- o **Body Contents**:
  - ▪ Essential research on Agricultural Robots, their applications and implications. This should include in-text citations that support research, in APA format
- o **References:** Use APA Standards
- o **Appendix:** *If applicable* (charts, graphs, tables, etc.)

- ✓ **Technical Writing Paper Format Standards:**
  - o The body of the paper must be limited to ten (10) pages.
  - o Title page, table of contents, abstract, reference pages, appendices are **NOT** included in the ten (10) page limit.
  - o Text must be in 12 point, Times New Roman font.
  - o Margins should be 1 inch margins. (left, right, top, bottom)
  - o Running Head of Title is not required.
  - o Headings and subheadings should be used.
  - o Page numbers should be in the Table of Contents and should begin with the Abstract (as page 2) and end with final page of the References or Appendix (if applicable).
  - o Page numbers should be on the upper right corner of each page.
  - o Lines should be double-spaced, typed, except in the case of charts and/or other graphics.
  - o Pages must be 8.5 inches by 11 inches.

- o Plagiarism of information will result in a zero score for the research paper. Use of all outside information must be cited.
- o APA standards for citations and references must be used.
- o Missing information and/or formatting errors will result in deduction of points.

*For a more in-depth explanation of the Research Paper, please refer to the following Brainshark Presentation
http://www.brainshark.com/hawaiieducation/vu?pi=zFhzUO5KSzFA5gz0

Firefox or Chrome are recommended
Password: Research2013

✓ **Product/Challenge Deliverables:**
- o Event challenge product/ performance task
- o PowerPoint Presentation should include a justification with supporting information and data.
- o All challenge deliverables must be saved properly on a flash drive that will be provided.

✓ **Oral Presentation Guidelines:**
- o Each team will have 20 minutes to present their product using PowerPoint. No other programs may be used unless they are embedded into the PowerPoint presentation.
- o Each member of the team must have a speaking part in the presentation.
- o Upon completion, judges will conduct a 10-minute question and answer (Q&A) session. Judges will direct questions to each member of the team. Each member must be able to respond to judges' questions.
- o Teams should use their own laptop for their presentation. An LCD projector with PC-compatible connector will be provided. **Please Note: If using MAC laptop, the team must provide own adaptor.**
- o If requested by March 23, 2016, a laptop will be provided. However, participants will be limited to the software loaded on the laptop.
- o Professional dress is required of all team members. (See professional attire guidelines for details.)

Scoring:
Individual scores for the technical writing paper, written tests, product/performance task, and oral presentation will be combined to determine the team's overall proficiency score. Per event, point deductions will be made for non-adherence to guidelines and criteria.

Recognition:
Individuals earning a proficiency score of 70% and above in any category of the performance-based assessment categories will be recognized.