**Course Outcomes Guide**

**Course Title:** Device Data Systems Arch ELE 101 **Date:** May 2018

**Course Team: Juan C Luna**

**Expected Learning Outcomes:**

- Specify and build network components related to industrial data networks.
- Understand strengths and limitations of several industrial data protocols.
- Troubleshoot simple networking protocol problems

**Assessment:**

At the end of Spring 2018 semester, the instructor administered an ELE101 assessment exam. The assessment exam covers all course outcomes. There was no data from previous semesters to analyze or compare.

**Validation**:

The course outcomes and assessment tool for Device Data Systems Arch **(**ELE 101) are consistent and aligned with recommendations from the following IEEE publications:

- Merging Pedagogical Approaches: University of Glasgow-UESTC Joint Education Programme in Electronics and Electrical Engineering. K. Meehan et al.
  Frontiers in Education Conference (FIE), 2014 IEEE. 978-1-4799-3922-0

- Intelligent Performance Assessment of Students' Laboratory Work in a Virtual Electronic Laboratory Environment. Achumba et al.
  IEEE TRANSACTIONS ON LEARNING TECHNOLOGIES, VOL. 6, NO. 2, APRIL-JUNE 2013

- Assessment of undergraduate electrical engineering laboratory studies. G. Carter et al.
  IEEE PROC, Vol. 127, Pt. A, No. 7, SEPTEMBER 1980

The final grade comprises a combination of homework, lab activities, with several exams in between. A final assessment exam can determine the overall comprehension of the subject, although it will not measure other components typical of lab activities, like team player skills, hands-on expertise. The final assessment exam cannot measure homework effort and time

management skills. Nevertheless, the final assessment exam can be an expected consequence of the effort put into the lab and homework activities.

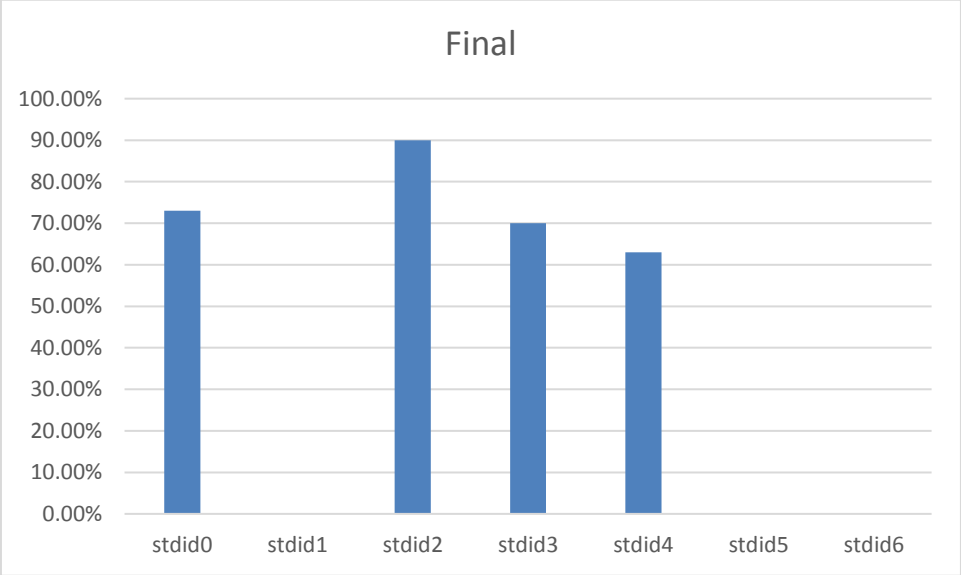
**Results:**

**Assessment Final Exam Results: Spring 2018**

The overall average score for the exam was 74%, the median was 71.5%, and the highest score was 90%. The sample size was 4 for the Spring 2018 semester.

Since the sample was not statistically significant, no relevant course outcome question breakdown was done.

**Spring 2018. N=4**




**Average Relevant Course Outcome Question: N/A**

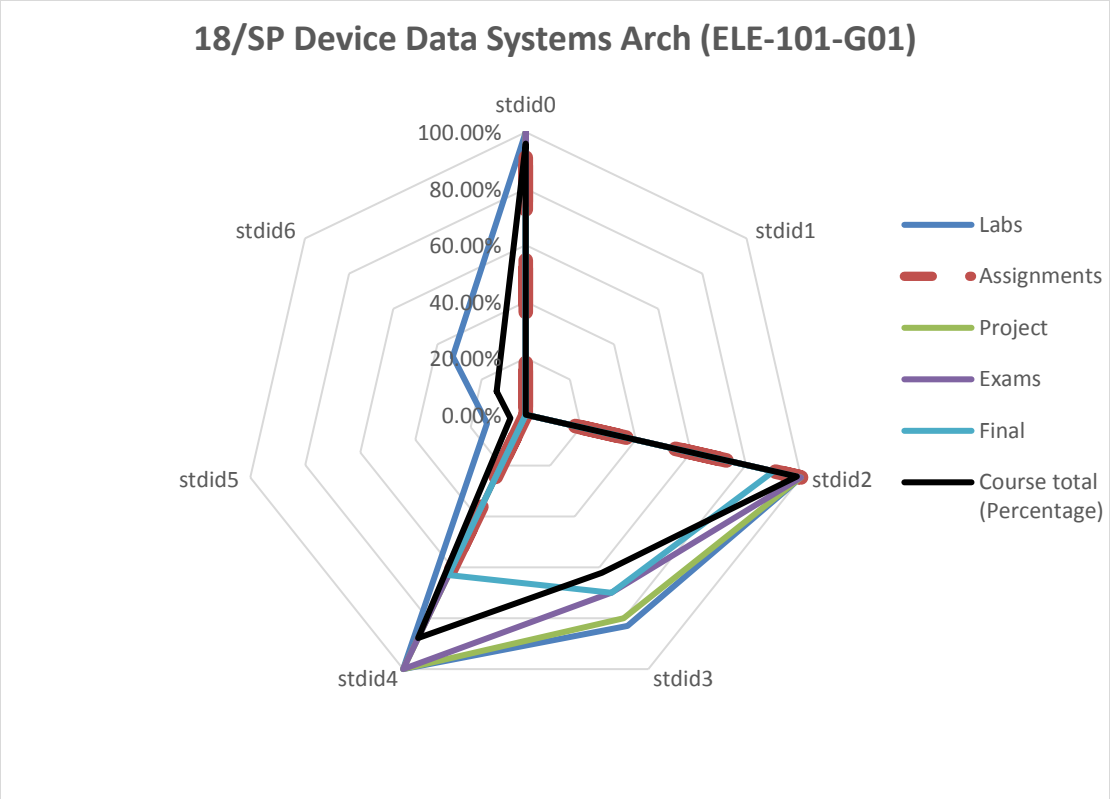
***Strengths & Weaknesses:***

Based in the data, most students perform extremely well in questions pertaining

- Specify and build network components related to industrial data networks.
- Understand strengths and limitations of several industrial data protocols.
- Troubleshoot simple networking protocol problems

**Assessment Final Grade Results: Spring 2018**

As it was expected the final grade is highly correlated with completion of assignments, lab activities, quizzes and exams.




The data shows two students that dropped the course the first two weeks and one student that dropped the course on the last month (13.2%).

From the above graph, the data shows that the final grade is strongly correlated with Quizzes and Assignments.
This data shows how important are <u>all</u> the core assessment components.

**COMPARISONS TO PREVIOUS SEMESTERS** :

N/A

**Follow-up**

- The data will be evaluated to improve teaching techniques
- The results will be used to alter the course content to focus on areas were students had the most issues

**Budget Justification**
No additional resources needed.