

# Student Learning Outcomes Assessment Summary

## **Civil Engineering, MS CE** *College of Engineering and Mines* **AY 2014-15 and 2015-16**

Submitted by: **Srijan Aggarwal**

Contact Information: [saggarwal@alaska.edu](mailto:saggarwal@alaska.edu), 474-6120

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### **1. Assessment information collected**

During these two academic years, we collected data using two standardized direct assessment mechanisms, and we also tracked the time to graduation. Assessment information is reported for 13 MS CE students that graduated in this two year period.

- 1) Comprehensive exam : 13/13 pass
- 2) Graduate committee Evaluation results (1-10 scale):
  - a. Knowledge of fundamentals 8.6
  - b. Technical rigor 8.2
  - c. Oral communication 8.6
  - d. Scientific/professional writing 7.9
- 3) Time to Graduation: Average for all students within this two year period was: 2.50 years (13 students).

### **2. Conclusions drawn from the information summarized above**

Based on the above assessment scores, overall the student performance was very good for this last two-year cycle. Relatively speaking areas of technical rigor and scientific and professional writing were identified as weaker areas to be focused on for the next round.

Graduation times tended to vary within the specific sub-disciplines. While most students in structural, transportation and geological engineering had completion times close to 2 years, students in environmental programs had graduation times close to 3 years.

### **3. Curricular changes resulting from conclusions drawn above**

Following steps are being taken in order to address the two weak sections identified above:

- 1) Technical rigor is considered a function of student coursework. To bolster the technical aspect of graduate studies in the MS CE program beyond the coursework, a written comprehensive exam is being planned for all the sub-disciplines within the MS CE program. Currently the comprehensive exam is not

uniformly administered; certain sub-disciplines hold a written exam (e.g. environmental engineering), while others (e.g., structural/transportation engineering) hold a short oral examination along with the final defense. Going forward a common policy of a systematic written comprehensive exam will be implemented across the MS CE program.

- 2) Professional/scientific writing is always a challenging aspect for many graduate students. In order to cater to a recognized need and weakness in this area, a new semester-long 3 credit graduate level writing course has been introduced in the MS CE program – which will be a required course for all graduate students within MS CE.

**4. Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting**

The analysis of SLOA results for MS CE for the current reporting cycle were discussed at the Civil Engineering department meeting on April 21<sup>st</sup>, 2016. Curricular changes identified above were discussed and recommended by all the 10 faculty members present at the meeting (Leroy Hulse, Srijan Aggarwal, Nathan Belz, Il-Sang Ahn, Silke Schiewer, Paul Perreault, Robert Perkins, Yuri Shur, Horacio Toniolo and Jenny Liu).