

Mechanical Engineering – BS/MS

College of Engineering and Mines (CEM)

AY 2016/17 and AY 2017/18

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1. Assessment information collected

- a. Faculty Course Assessment Reports (FCAR). FCARs from 10 courses (300-level and above) were prepared by individual instructors and collected by the ABET coordinator for analyses.
- b. NCEES Fundamentals of Engineering (FE) Exam. The results for AY16-17 were collected (AY17-18 not available yet to the department.)
- c. Capstone design projects. The spring 2017 and 2018 projects were collected: 1 in spring 2017 and 1 in spring 2018.
- d. Annual progress reports (through Dept. chair) and GPA.
- e. Graduate advisory committee (GAC) evaluation at the time of thesis/project defense.
- f. Post-defense Student Assessment Form (available as on-line form in department's Google Drive)
- g. Authorship in journal manuscripts, reports, and other technical documents.

2. Conclusions drawn from the information summarized above

- a. FCAR results are based on 10 courses against 13 criteria that align with the ABET criteria. The results are on a 4-level scale EAMU (Excellent, Average, Marginal, and Unsatisfactory.) Students in the program score substantially higher than the average for the BS program (by average of 1 to 1.5 on EAMU scale).
- b. All students in the program pass the FE exam with above national average in 80% (4 out of 5) categories.
- c. All students make sufficient research progress by the end of their program, but most significant activity occurs in the last semester. This occurs because the course load is very high for this program until the final semester, restricting time to do independent research.
- d. Most GAC members report that students are technically competent at the time of graduation, and have strong oral and written communication skills.
- e. Graduating students are rated high in ability to conduct independent research.
- f. Most students do not complete/submit a peer-reviewed journal article based on their research by the time of completion of the degree program.

3. Curricular changes resulting from conclusions drawn above

- a. No curricular changes are being made to address this complication. Rather, faculty advisors are going to re-double efforts to encourage students to try and start their research earlier, even if only at a relatively slow rate.
- b. No changes are deemed necessary to address this conclusion.
- c. No changes are deemed necessary to address this conclusion.
- d. Faculty discussion regarding lack of publications resulted in encouraging future theses outlines to be correlated with a target journal format early in the students' program (e.g. year 1). It is anticipated that this may help the students more easily adapt their final thesis/report into a journal article more quickly so that it can be completed before they graduate and leave the university.

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

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| a. Cheng-fu-Chen | e. Chuen-Sen Lin |
| b. Deben Das | f. Rorik Peterson |
| c. Daisy Huang | g. Yujiang Xiang |
| d. Sunwoo Kim | h. Lei Zhang |