REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
UNITED STATES MILITARY ACADEMY
West Point, New York 10996

MADN-CHM-LS 19 September 2014

MEMORANDUM THRU COL Leon Robert, Professor and Head, Department of Chemistry and Life Science, USMA, West Point, NY 10996

FOR Dean of the Academic Board, USMA, West Point, NY 10996

SUBJECT: 2014 Executive Summary of Chemical Engineering Program Assessment

This memo is an executive summary, as per *DPOM 5-7 Assessment of Student Learning in Academic Majors*, outlining the Chemical Engineering Program's assessment and assessment process, as well as any program improvement efforts, that have occurred since the last executive summary in November 2013. Our assessment process for AY14 is approximately 66% complete as of the writing of this document.

a. As stated above, the chemical engineering assessment process is not complete yet. We are awaiting advisory board feedback before finalizing our results. The advisory board meeting is scheduled for 13-14 November 2014. We are also awaiting results from NCEES on the performance of our students in the FE Exam.

b. Student outcomes (SOs) are evaluated on an annual basis and the preliminary results are attached to this memo, including results for AY2014. The earlier results were incorporated into Criterion 4 of the 2104 chemical engineering self-study report, and we repeat this process on an annual basis to ensure that data is available for the next self-study report in 2020.

d. ABET Committee and program-level work within the department to date during this AY have focused primarily on preparation of ABET self-studies as well as preparation for the ABET visit. Even though preparations for this visit have taken a significant amount of time, but we are still essentially on schedule with respect to the timeline shown in Paragraph f below.

e. Potential shortcomings and actions taken to address them: At this time, we feel that the program is "clean" and ready for the ABET visit. All indications are that we are in good shape; the ABET PEV has not identified any issues at this time. Outstanding issues from last AY include:

(1) A potential shortcoming was identified last year involving missing course assessment documents for several courses in our department. ABET criteria call for the establishment of an assessment process that gathers data from the courses in the program to assess the degree to which the student outcomes are being attained, as well as making an effort at continuously improving the courses. This criterion is not satisfied if courses are not conducting assessments in a timely fashion and the integrity of the assessment process is compromised. The program has taken steps to improve this situation, including counseling of course and program directors. As a result, all course assessment packages were submitted on time in AY14.

(2) A second, more serious shortcoming was the cancellation of the 1st and 4th Class Academic Surveys. ABET criteria call for the establishment of an assessment process that gathers data on the attainment of student outcomes. The chemical engineering program was relying heavily on the above-mentioned surveys for part of its assessment. The availability of institutional surveys was intended to convey an image of stability in the assessment process. They also allowed us to compare results for our cadets against those for the overall cadet population. Because of this, the cancellation of these surveys cannot be replaced at the program level. The impact on the program is that this survey data is now lost, and the regularity of any future institutional surveys is now highly questionable. Recommendation: *We ask that this survey be re-instated as for this academic year.*

(3) Significant planned curricular changes for the upcoming year include addressing continued weakness in our performance in process control on the FE exam. These To date, these have been numerous, but ineffective. We are currently examining the process control sections of the Chemical Engineering Laboratory to augment the control coverage there. We are also planning the introduction of a series of process control experiments (simulated experiments) in the Professional Practice course. More significant changes to the curriculum may be required, and we are awaiting completion of the core curriculum revisions before discussing the introduction of a possible new course in automatic process control. Changes will not be proposed until after AY15.

(4) The chemical engineering advisory board meeting was impacted by the government shutdown. As a result of lack of funding as well as travel restrictions during this time period, the advisory board meeting has been tentatively rescheduled for 7 March 2014.

f. The updated current assessment timeline is as follows:

JUN/JUL: Data Collection
- Spring-term course assessments.
- Collect and review FE Exam Results and program embedded indicators
- Collect and review institutional survey results and cadet transcripts

AUG/OCT: Data Analysis
- Prep data for presentation to faculty and advisory board

NOV/DEC: Data Presentation
- Review suggested changes from last assessment cycle
- Presentation of program assessment to advisory board, faculty and cadets
- Review Spring Syllabi - Ensure compliance with program outcomes

JAN: Fall-Term Course Assessments

JAN/FEB: Review of Program Assessment Results
- Preparation of final written report.

MAR: Submission of Assessment Report for Publication

ANDREW BIAGLOW
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Program Director

Enclosures
1. Encl 1 – excsum_CEN0_09-2014_FINAL