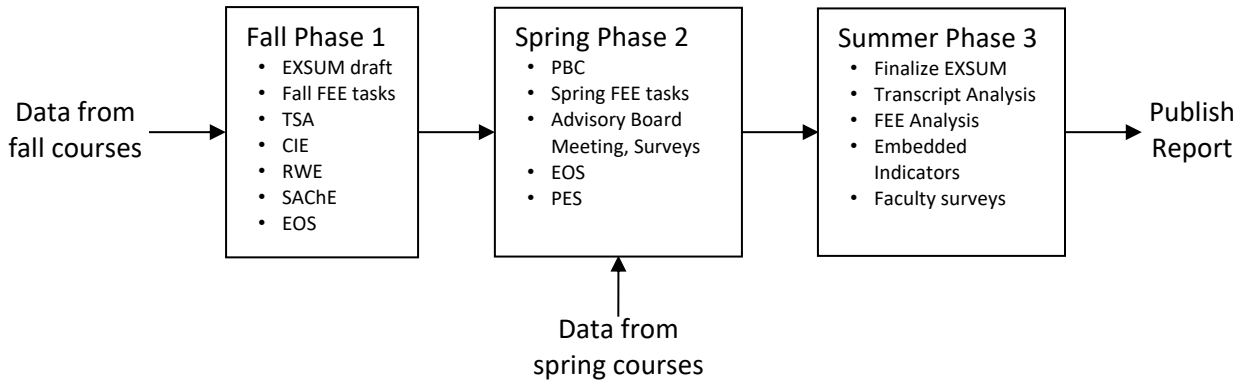
Chemical Engineering Program Assessment Process

Last Updated 1 July 2020



End of Semester Student Outcomes Surveys (EOS)

1. Survey is required from all cadets every semester NLT Lesson 38.
2. Survey goes out to yearlings, cows and firsties each semester, typically though CDs in CH365 and CH364 (fall) and CH362, CH364, and CH402 (spring).
3. Filenames for the surveys:
   - "outcomes_survey_20yy-1_cows.docx"
   - "outcomes_survey_20yy-1_firsties.docx"
   - "outcomes_survey_20yy-2_yearlings.docx"
   - "outcomes_survey_20yy-2_cows.docx"
   - "outcomes_survey_20yy-2_firsties.docx"
4. Data is entered by hand directly from the paper surveys into the analysis spreadsheet.
5. Filename for the spreadsheet analysis:
   - "Program_Outcomes_Surveys_yy1.xls" - results go back to CDs ASAP in January after TEEs.
   - "Program_Outcomes_Surveys_yy2.xls" - results go back to CDs ASAP in May after TEEs.
6. The results of the analysis are carried forward to MS Word file "Program Assessment Data" and to "Advisory Board Slides - Section 2."

Program Exit Survey (PES)

1. Survey is required for all spring-term firsties during Lesson 40 in CH402.
2. Survey is completed in class with informal discussion.
3. Filename for the survey:
   - "Program_Exit_Survey_AYyy.docx"
4. Filenames for the spreadsheet for analysis:
   - "Program_Exit_Survey_R&A_AYyy.xlsx"
5. Data is entered by hand into the R&A spreadsheet.

6. The results of the analysis are carried forward to MS Word file "Program Assessment Data" and to "Advisory Board Slides - Section 2."

Program Assessment Briefing to Cadets (PBC)

1. Program assessment briefing slides are presented to cadets. The briefing is a discussion of program educational objections, their relevance to USMA and the Army, and previous year's assessment.
   - The filename is "Program Assessment Briefing yy January 20yy.pptx."
2. The briefing occurs in early January in lesson 2 in CH400.
3. A survey is conducted in tandem with the briefing.
   - The filename is "Cadet Surveys yy.docx"
4. The data from the surveys is entered into the excel R&A spreadsheet.
   - The filename is "20yy Faculty, Advisory and Cadet Surveys R&A w STDEV.xlsx"
5. The results of the analysis are carried forward to MS Word file "Program Assessment Data."

Transcript Analysis

1. Complete transcripts are typically available a few days after graduation. You can begin checking after term end exams.
2. Transcripts can be printed directly from AMS. Prior to this capability, we would email the POC in AARS/ORD (Ms. Stephanie Green) and request the transcripts by name.
3. Filename for the spreadsheet analysis:
   - "Transcript Analysis – AYyy.xlsx"
4. For each chemical engineering cadet, transfer the letter grades from the transcript into the spreadsheet.
5. The results of the analysis are carried forward to MS Word file "Program Assessment Data" and to "Advisory Board Slides - Section 2."

Analysis of Embedded Indicators

1. Spreadsheet analysis is due from chemical engineering CDs at the close of each semester within 1 week of submission of final grades.
2. Filename for the course assessments from the CDs:
   - "CHxxx AYyy Student Outcomes Assessment.xlsx." (This is the "1/0" spreadsheet.) For example, "CH459 AY20 Student Outcomes Assessment.xlsx."
3. Filenames for the spreadsheet analysis:
   - "AYyy Embedded Indicators Analysis.xlsx." For example, "AY20 Embedded Indicators Analysis."
   - "AYyy Embedded Indicators Year-to-Year R&A.xlsx." For example, "AY20 Embedded Indicators Year-to-Year R&A.xlsx."
4. Go to the third worksheet ("program") in each of the course files and transcribe the numbers to the embedded indicators analysis worksheet.
5. Transcribe the data from the embedded indicators worksheet to the year-to-year R&A worksheet.
6. Contact the Mechanical Engineering Program Director for the course assessment packets for MC311 and MC312 (Dr. Gunnar Tamm or LTC Andrew Bellochio in AY20).
7. Filenames used in AY14 for the course assessments:

- "MC311 Course Assessment AYyy.docx" (renamed by us to "MC311 AYyy assessment.")
- "MC312 AYyy Course Assessment.docx" (renamed by us to "MC312 AYyy assessment.")

8. Look for Appendix A: Course Assessment Matrix in each of these files and transcribe the chemical engineering results into the embedded indicators analysis worksheet. Take the highest score in each row and its corresponding correlation score and transcribe those into the embedded indicators analysis worksheet.
9. Each graph in the embedded indicators analysis worksheet needs to be copied and pasted into the "Program Assessment Data.docx."
10. The results of the analysis are carried forward to MS Word file "Program Assessment Data" and to "Advisory Board Slides - Section 2."

<u>Teamwork Skills Assessment for Student Outcome 5 (TSA)</u>

1. POC is the CH459 course director. Coordinate surveys with CD before start of fall semester during course development.
2. Surveys must go out to cadets immediately after each lab project and are due at the end of the last lab session.
3. Filename for the cadet surveys is:
   - "AYyy_SO5_Teamwork_Assessment_Rubric_Working_Blank.docx"
6. For each cadet, transfer the scores from the survey into the analysis spreadsheet. Filename for the spreadsheet analysis:
   - "AYyy_SO5_Teamwork_Assessment Rubric_Analysis_Peers.xlsx"
4. When finished, transcribe the GLAT and TAL averages from the analysis spreadsheet data into the program assessment rubric:
   - "AYyy_SO5_Teamwork_Assessment_Rubric_Working__Data_RoundRobin1.docx"
5. The results of the analysis are carried forward to MS Word file "Program Assessment Data" and to "Advisory Board Slides - Section 2."
   - I used snapshots of pdf files for this as it seems to work best.

<u>Contemporary Issues Essay to Assess ability to Acquire New Knowledge for Student Outcome 7 (CIE)</u>

1. POC is the CH485 course director (LTC Miller in AY20 and LTC Cowart in AY21)
2. Rubrics are used to assess the performance of cadets in CH485 Writing Assignment.
3. Filename for the rubric is:
   - "AY20_SO7_Contemporary_Issues_Grading_Rubric_Blank.docx"
4. For each category on the rubric, transfer the average scores and standard deviations to the data summary sheet. Use a blank rubric for data presentation. Convert the cadet rubric into a fillable form in pdf.
   - The file name is "AY20_SO7_Contemporary_Issues_Grading_Rubric_Fillable.pdf"
5. The results of the analysis are carried forward to MS Word file "Program Assessment Data."
6. I used snapshots of pdf files for this as it seems to work best.

<u>Resume Writing Exercise to Assess Ability to Acquire New Knowledge for Student Outcome 7 (RWE)</u>

7. POC is the CH365 course director (Dr. Biaglow in AY20)
8. Rubrics are used to assess the performance of cadets in CH365 Resume Assignment.
9. Filename for the rubric is:
   - "AYyy_SO7_Resume_Grading_Rubric_Blank.docx"

10. For each category on the rubric, transfer the average scores and standard deviations to the data summary sheet. Use a blank rubric for data presentation. Convert the cadet rubric into a fillable form in pdf.
    - The file name is "AY20_SO7_Resume_Grading_Rubric_Fillable.pdf"
11. The results of the analysis are carried forward to MS Word file "Program Assessment Data."
12. I used snapshots of pdf files for this as it seems to work best.

FE Exam Admin Tasks and Timeline (1-n) list:

1. Gain access to the 'whois' feature on AMS **(AUG)**
2. Construct NCEES excel data base consisting of the following information
    a. Cadet name and cell number
    b. Home of record
    c. Birthday
    d. Guardian and cell number
    e. C-number
    f. Civilian email address (to contact after graduation)
    g. NCEES test number
    h. NCEES username and password (keep same for everyone) **(OCT)**
3. Construct Delaware Association of Professional Engineering data base
    a. Cadet name and cell number
    b. Home of record
    c. Birthday
    d. Guardian and cell number
    e. C-number
    f. Civilian email address (to contact after graduation)
    g. DAPE number
    h. DAPE username and password (keep the same for everyone) **(OCT)**
4. Register each cadet for DAPE account **(NOV)**
5. Pay for DAPE account with one payment from DEAN; Memo to Dean from Program Director to justify DAPE expense. **(NOV)**
6. Dept. Head Senior Status Verification memo to DAPE. **(NOV)**
7. Have cadets sign and scan DAPE affadavits
8. Email affadavits to DAPE. **(NOV)**
9. Register cadets for NCESS account. **(NOV)**
10. Ensure cadets verify accounts with civilian email address**. (NOV)**
11. Have Dean office pay for NCEES accounts.
12. Start going to FEE planning meetings at CME/Systems. **(NOV)**
13. Submit purchase request for ppi2pass web access for CH400; **(DEC)**
14. Schedule the FEE starting 15FEB; through ~1APR…to give first time failures time to retest before graduation)
15. Check NCEES pass/fail as necessary.
16. Send transcripts to DAPE after graduation.

FE Exam Analysis

1. Obtain NCEES Report from AAD (NCEES POC is Dr. Lachance).
2. Filename is "Spring_20yy_405_EAC_Enrolled-FE."

3. Data usually arrives in mid-July. Last year the file was received from Dr. Lachance on 15 July.
4. The analysis is in the internal program file is "FEE Analysis – AYyy."
5. The data from the analysis is then output to MS Word file "Program Assessment Data" and to "Advisory Board Slides - Section 2."

ABET Advisory Summary

1. Maintain listing of names, emails, addresses, phone numbers and schools/Departments of ABET Advisors. Scrub list once/year.
2. September/October of each academic year consult Department Calendar/ Department Head for 3-4 dates in April/MAY timeframe to conduct ABET Advisory Meeting.
3. Mid-late October of each academic year email the Advisors the proposed dates and gain consensus on best date to conduct the advisory meeting.
4. Roll up the previous academic year assessment results.
5. Build the slides for the meeting and submit to Department Head for feedback.
6. Send out the rough draft slides, assessment data and surveys to the ABET Advisors.
7. Put dates on the Department Calendar.
8. Organize logistics for meeting: Hotel reservations, conference room, lunch reservations, van.
9. Conduct meeting; have the surveys complete before advisors leaves.

Program Executive Summary (Exsum)

1. The exsum is due by 30 September. Chemical Engineering completes a preliminary exsum by the suspense and then a final version after the advisory board meeting.
2. The program assessment is summarized in this document.
3. The actual program assessment data and actual assessment are included as an attachment (enclosure).