ANNUAL PROGRAM REPORT

1. SELF-STUDY (about 1 page)

A. Five-year Review Planning Goals

Present your Planning Goals from your last 5-Year Plan, indicating changes and updates from last year's report.

The last comprehensive Program Review was the ABET Self-Study report which was prepared in July of 2013. The next comprehensive Program Review will be the ABET Self-Study report which will be prepared by July 1st of 2019. There are annual student outcome assessment reports which are prepared to measure achievement of student outcomes. ME program Student Outcomes, Assessment Process, and Assessment results are described in section 2 of this report.

B. Five-year Review Planning Goals Progress

Report on progress toward achievement of your 5-Year Plan.

The ME department is on its 4th year of program review during this 2016-17 review period. The data that have been collected to date and assessed show no anomalies.

C. Program Changes and Needs

Report on changes and emerging needs with relation to a) curriculum and b) resources (including faculty, staff, space, equipment).

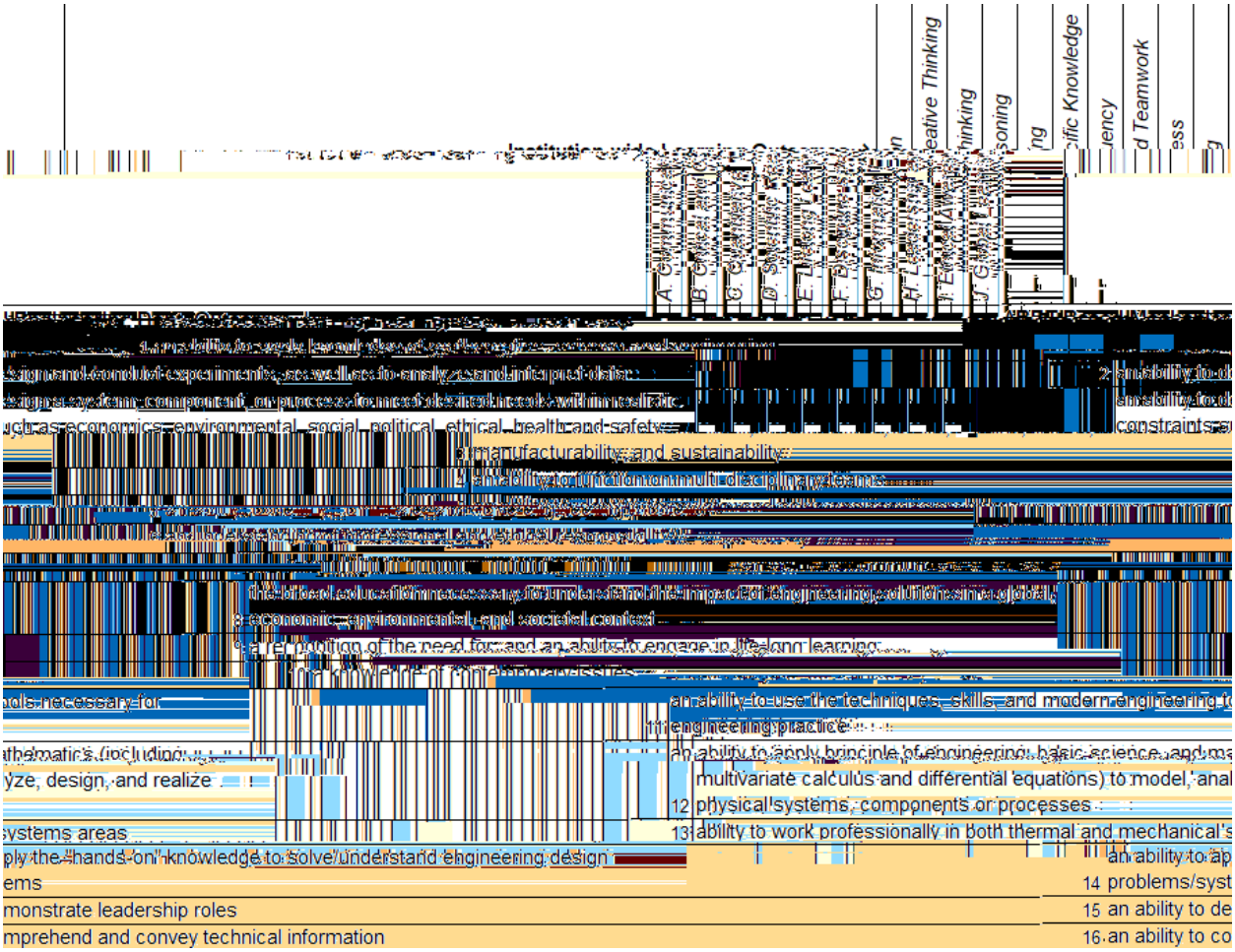
a) The following courses were reduced from 4 units to 3 units to reduce the overall number of program units: ENG 300 (Engineering Numerical Modeling & Analysis, ME 432 (Machinery Design), and ME 444 (Energy Systems Design)

b)

2. SUMMARY OF ASSESSMENT (about 1 page)

A. Program Student Learning Outcomes

The Mechanical Engineering Department has 16 learning outcomes that are defined by the accrediting body, ABET. The table below shows the mapping between those outcomes and the ILOs.



B. Program Student Learning Outcome(s) Assessed

The majority of courses taught by the Mechanical Engineering faculty in the 2016-17 Academic Year carried out assessments of student learning outcomes. The course outcomes are mapped onto the 16 department outcomes. Assessment of the course outcomes for each class is used in the assessment of the department's performance in each of the 16 department outcomes.

C. Summary of Assessment Process

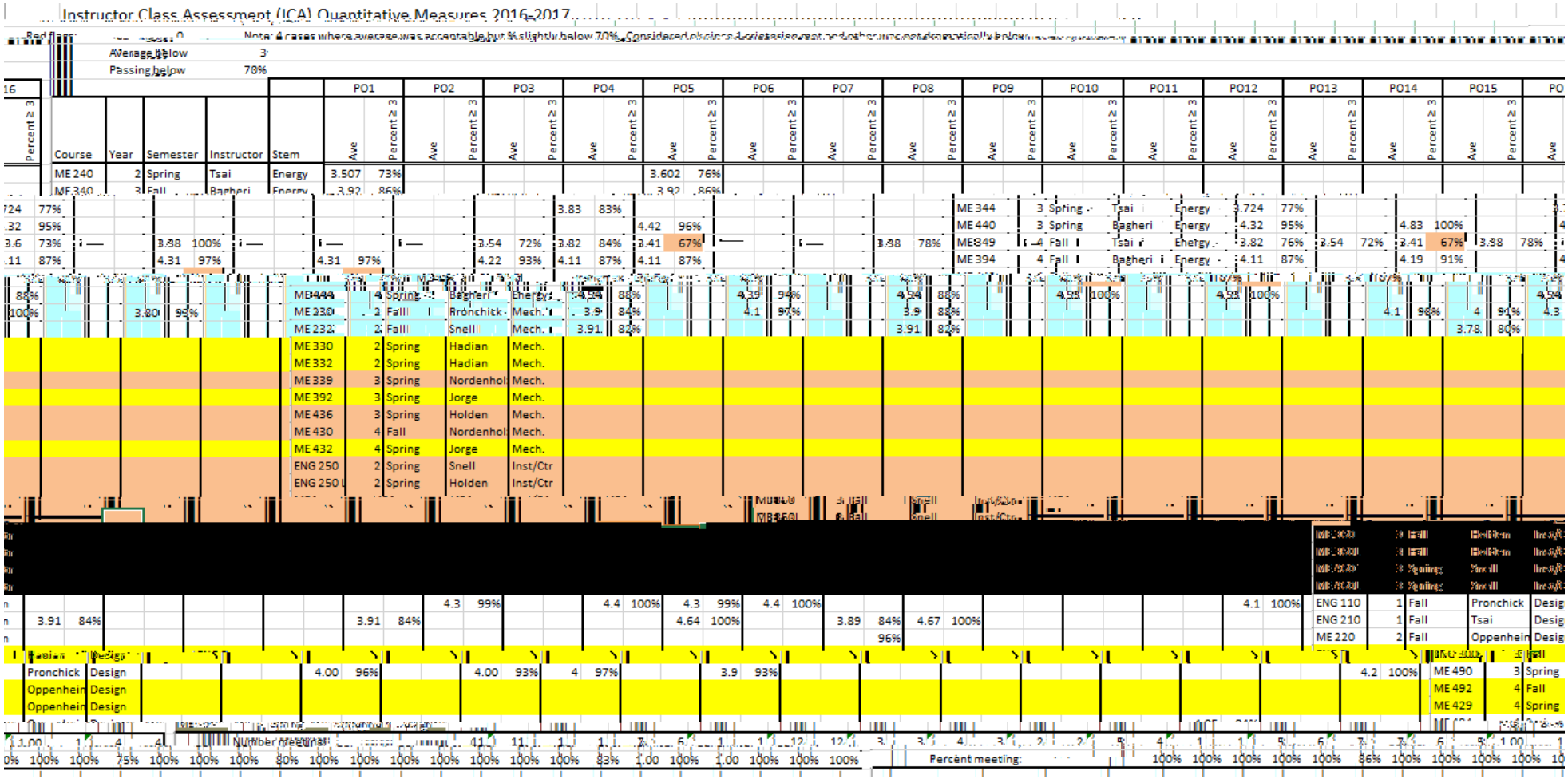
Within each Mechanical Engineering course, two forms of assessment data are collected. The more quantitative and analytical of the two is the use of course materials to assess student

performance in meeting the course outcomes. For each course outcome, the instructor must identify an assignment, project, quiz problem, or exam question that scores the students between 1-5, where 5 demonstrates exemplary performance and 3 demonstrates competence. The instructor then aggregates the score and compile results for the course. A second assessment is the use of student surveys, which ask the students to self-assess how strongly they feel they have met the course objectives. The students are asked to use a 1-5 scale, where the meanings of the values are similar to the earlier assessment. The measures from both methods for each course outcomes. Since each course outcome is mapped to a department outcome, the instructor then aggregates scores for each of the department outcomes assessed by the course outcomes. These results are placed into a central spreadsheet for the department. For a course to meet the meet the goals laid out by the department, the results from each of these methods should yield and average score of 3.5 or have 70% of the population score 3 or better. Courses that do not meet the requirements are identified for further review.

D. Summary of Assessment Results

Currently, there are no major anomalies from the assessment data collected. The data set from the Instructor Class Assessment is shown on the next page. It demonstrates which courses are assessing which Department Outcomes based on the Course Outcomes. No corrective actions are being proposed with regard to course operations.

However, because of the level of effort required for full assessment of all courses, even on a bi-annual basis, the department is studying methods of streamlining the process. This should include the automation of the collection of student self-assessment data and more selectively choosing courses that will cover all of the department's outcomes.


Instructor Class Assessment (ICA) Quantitative Measures 2016-2017
Average below 3
Passing below 70%
PO1
PO2
PO3
PO4
PO5
PO6
PO7
PO8
PO9
PO10
PO11
PO12
PO13
PO14
PO15
Course
Year
Semester
Instructor
Stem
Ave
Percent ≥ 3
ME 240 2 Spring Tsai Energy 3.507 73% 3.602 76%
ME 344 3 Spring Tsai Energy 3.724 77%
ME 440 3 Spring Bagheri Energy 4.32 95%
ME 394 4 Fall Bagheri Energy 4.11 87%
ME 330 2 Spring Hadian Mech.
ME 332 2 Spring Hadian Mech.
ME 339 3 Spring Nordenhol Mech.
ME 392 3 Spring Jorge Mech.
ME 436 3 Spring Holden Mech.
ME 430 4 Fall Nordenhol Mech.
ME 432 4 Spring Jorge Mech.
ENG 250 2 Spring Snell Inst/Ctr
ENG 250 2 Spring Holden Inst/Ctr
ENG 110 1 Fall Pronchick Desig
ENG 210 1 Fall Tsai Desig
ME 220 2 Fall Oppenhein Desig
Pronchick Design 4.00 96% 4.00 93% 4 97% 3.9 93% 4.2 100%
Oppenhein Design
ME 490 3 Spring
ME 492 4 Fall
ME 429 4 Spring
Number meeting:
Percent meeting: