BACKGROUND

Students develop their knowledge of machine components and materials for the purpose of effective and efficient mechanical design. Emphasis is placed on developing analytical methods and tools that aid the decision making process.

I. 4-credit ME core course
   - 3 exams
   - 3 projects
   - 1 presentation

II. 245 students in spring’17
    - 3 lecture sections
    - 7 lab sections

WHAT IS CHANGING

1. Modify the delivery with specific course and module learning outcomes in doable and measurable ways.
2. Design and create integrated learning modes by expanding lecture-dominant one to a combination of passive, active and interactive learning ones.
3. Develop appropriate individual and team-based in-class/out-of-class activities and formative/summative assessments.
4. Construct clear performance-based rubrics for written requirement and oral presentation in addition to traditional score-based grading.

INTENDED OUTCOMES

1. Efficiently achieve course objectives with students’ effective learning of the referenced subject, eventually aid in students’ life-long learning.
2. Assessed and evaluated with in-class feedback survey data and grades for the courses with and without modified course delivery and pedagogy

Learning Outcomes:
1. Formulate machine problems for analysis and design
2. Create models for load transmission and calculate responses
3. Identify failure modes and determine safety factors
4. Use a systematic approach and apply computer tools for designing machine
5. Estimate cost, schedule, safety, quality, etc. for evaluating and selecting the design
6. Communicate with written reports and with oral presentation of the design product

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