

The SHM implementation at Tuskegee University occurred in the Mechanical Engineering department. The College of Engineering at Tuskegee does not have a Civil or Environmental Engineering programs. The selected course for implementation was Experimental Mechanics Laboratory. In one semester, students went through both the foundation and application modules as well as the in-class demonstration at the end of the semester.

Experiences and observations relative to the implementation of the FEMs, SEMs and SAMs

- Overall all the implementation was positive and meaningful. The students showed interest in learning about SHM as this field was new to them. When the demonstration part of the implementation was performed, students were particularly interested to see the connections between real life and the theory they learned in their solid mechanics courses. The instructor thought it was particularly useful and engaging to have student think critically about the set up created to represent damage including the use of plugs to switch the beam between damaged and healthy modes.
- While the modules provided step by step guidance for the students, the instructor felt that, possibly due to the fact that our implementation involved mechanical engineering students, the modules were somewhat lengthy, beyond the typical attention span for passive reading, and provided information that was too extensive.

Recommendations for enhancement/improvement of the education/assignment modules and the education pedagogy

- To help faculty monitor students' completion of mastery exams and the anonymous surveys, we would suggest that a printable receipt that the student can submit to the instructor as evidence of completion. The receipt will have the student's name as well as his/her institution name along with a time stamp. The mastery exam receipt will additionally show the obtained grade.
- For future development, we would suggest that the fundamental and application modules be tailored to mechanical applications.
- We would also suggest a setup where damage is represent in a more realistic way.