

CCLI EMD 0088904

Educational Materials for Effective Practices in Engineering Service Courses

National Science Foundation monies well-leveraged at Rose-Hulman Institute of Technology.

NSF has supported an EMD pilot project to improve student learning outcomes in electrical systems service courses taken by mechanical engineering students. As part of the NSF project, a studio classroom environment has been designed to allow a blend of lecture and laboratory work in each 2-hour class period. The students work with signal conditioning systems, measurement systems, electrical machines, power, and controls. These topics are readily related to mechanical engineering and are presented in the context of mechanical engineering so that ME students can readily see how they connect to their discipline.

In the latest offering of the redesigned course, 89% of the students say the COURSE and their LEARNING EXPERIENCE are either very good or excellent. This compares to 48% for the COURSE and 54% for LEARNING in the course prior to the NSF-supported project.

The Caterpillar Foundation is impressed by the excellent outcomes and has provided \$100K so that the NSF project scope may be augmented to include data acquisition and instrumentation. The dedication ceremony for the Caterpillar Foundation grant took place on the Rose-Hulman Institute of Technology campus on October 3, 2003.

Officials from the Kern Foundation, in a RHIT campus visit in the spring of 2003, were so impressed by the studio classroom designed under the grant that they have provided \$125K for building and equipping an additional studio classroom at Rose-Hulman. They have expressed interest in providing additional funding in the future.

These funds are not being used as part of the match by Rose-Hulman. They represent funds that leverage the impact of the original NSF pilot project, which itself included matching monies from Rose-Hulman Institute of Technology.