Enhancing the Engineering Ethics Curriculum by Analyzing Students' and Faculty's Perceptions

Brittney Jimerson and Eui Park, Ph.D
Department of Industrial and Systems Engineering
North Carolina A&T State University
Greensboro, NC, 27411, USA
bhjimers@aggies.ncat.edu, Park@ncat.edu

Abstract

The College of Engineering at North Carolina A&T St University (NC A&T) is committed to educating their students on ethical responsibility to prepare them for their careers. In 2012 a survey was administered to measure students' perceptions of ethical coverage in the College of Engineering at NC A&T. These results were used to identify areas in the curriculums where ethics might be strengthened, and provided a more informative way of improving ethics instruction and development from a student's perspective. Not only did these responses provide the departments with a baseline measure of how students perceived their ethics instruction, but how they understood ethical issues, particularly as they relate to global differences, issues of advocacy and ethical leadership, and ethics and emerging technologies. To compliment previous ethics curriculum improvement efforts, a faculty perception survey was developed and administered to assess their knowledge of engineering ethics, the degree to which ethics is addressed in their classes, and recommendations to improve student's ethical knowledge. The results from both surveys will help enhancing the ethics curriculum to help students gain awareness of ethical issues and build their competencies, so that they can identify, analyze, judge, and evaluate ethical matters.

Biographies

Brittney Jimerson is a Ph.D. Candidate at North Carolina A&T State University. She graduated from North Carolina A&T State University with a M.S. in Industrial and System Engineering in 2013. She was an undergraduate research scholar and earned her B.S. in Industrial Engineering and Management from the University of North Carolina at Asheville in 2009. She is an Alpha Pi Mu Engineering Honor Society Member, NSBE member, and IIE member. Her research interest include quality assurance, engineering ethics, human performance modeling, and human computer interaction.

Dr. Eui H. Park, Professor of the Department of Industrial and Systems Engineering (ISE) at North Carolina A&T (NC A&T) State University, received his Ph.D. from Mississippi State University in 1983. Upon completion of his Ph.D., he joined NC A&T and has since initiated and developed a successful Human-Machine Systems Engineering program and interdisciplinary manufacturing program. He has also conducted STEM outreach programs, the Para-Research Program, Partnership in Education and Research, REU, and RET, for the past sixteen years. He is the founder of teaching factory, Piedmont Triad Center for Advanced Manufacturing. Dr. Park was also the Chairperson of the ISE Department for sixteen years from July 1990. He has been an IIE Fellow since 2000. His research interest include Human-Machine Systems Engineering and Quality Assurance. He has been a principle investigator in 24 awarded funded research projects totaling over $12 million in the past ten years.