

## **The Freshman Engineering Experience: Results from a Mixed-Method Evaluation Study**

### **Abstract**

A mixed-method research design was used to investigate the attitudes, perceptions, and experience of 256 students enrolled in an introduction to engineering course in the Lee College of Engineering at the University of North Carolina at Charlotte (UNC Charlotte) during fall 2009. Major contextual and individual factors were incorporated into the study to evaluate their influence on students' persistence in the major. By the end of the semester, there was a statistically significant difference in students' perceptions of the major and the profession. Although they were more likely to believe that engineers are more concerned with improving the welfare of society than other professions, they were less likely to believe that the future benefits of studying engineering were worth the effort. They also had a less favorable view of engineering professionalism, and they were less likely to be interested in engineering as a career. These results suggest that some freshman students started to re-consider the value of engineering degree during the first semester as they realized the demanding engineering curriculum and high level commitment required of them. However, by the end of the semester, 88% of the students still liked engineering as a career. The follow-up qualitative data analysis showed different patterns between male and female students' peer relationships and support systems. Furthermore, male and female students also tended to adopt slightly different coping strategies relative to the demanding course workload. While male students were more likely to form a quick social network and to build "learning relationships" with "like-minded" others most female students tended to work alone and exclusively focused on academic work while not seeking more diverse and non-academic social networking opportunities. Each strategy seems to present some positive and negative consequences.