In a time of strained resources and dynamic environments, the importance of effective and efficient academic systems is critical. This study uses feedback from multiple stakeholder groups to define quality in academic departments and assess each unit’s efficiency at achieving such quality.

The approach was delineated in three phases—(1) Quality Model Development, (2) Input-Output Selection, and (3) Relative Efficiency Assessment. The model was developed through a two round Delphi-like study complimented by an expert group refinement. The results were compared to the engineering accreditation body (ABET) criteria to ensure the model’s suitability to capture quality.

The Analytic Hierarchy Process (AHP) was then applied to the resulting model to quantify the perspective of students, administrators, faculty and employers. Using the composite preferences for the collective group (n=74), the model was limited to include only the top attributes. Data corresponding to the resulting variables, referred to as key performance indicators, was collected using various information sources and infused in the Data Envelopment Analysis (DEA) methodology.

This process reveals both efficient and inefficient departments while offering transparency of opportunities to maximize quality outputs. Findings implicate the potential of the DEAHP approach for administrative decision-making in higher education. Several recommendations are made and future research opportunities are identified to extend this analysis and apply to alternative domains.

Major: Industrial Engineering

Educational Career:
Bachelor's of Industrial Engineering, BS, 2008, Univ. of Central Florida
Master's of Industrial Engineering, MS, 2009, Univ. of Central Florida

Committee in Charge:
Dr. Jose Sepulveda, Chair, Industrial Engineering & Management Systems
Dr. Robert Armacost, Industrial Engineering & Management Systems
Dr. Mary Ann Feldheim, College of Health & Public Affairs
Dr. Dima Nazzal, Industrial Engineering & Management Systems
Dr. Charles Reilly, Industrial Engineering & Management Systems

Approved for distribution by Dr. Jose Sepulveda, Committee Chair, on June 5, 2013.

The public is welcome to attend.