Humanitarian Engineering

ECE 5050

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:

Prerequisites and Co-requisites:
Prereq: 1182 or 1282; or Grad standing; or permission of instructor.

Course Goals / Objectives:
- Students will be competent in knowing how to solve problems of poverty and underdevelopment with a goal for social justice
- Students will master the identification and characterization of engineering strategies and technology for development
- Students will be competent in applying their skills to community development and humanitarianism in the university and engineering enterprise
Course Topics:
- Introduction to challenges
- Social justice is the goal of engineering development
- Religious and Secular Perspectives on Social Justice
- Social Justice: Political Philosophy and Economics Perspectives
- Social Justice: Economics and Engineering Ethics Perspectives
- Development Strategies
- Development Strategies and Implications for Engineering
- Engineering for the Poor, Weak, and Developing Communities
- Extreme Design Constraints and Appropriate Technology
- Environment and Sustainable Design
- Design Implementation and the Single Field Test
- Scaling Up
- Universities and Humanitarian Engineering
- Humanitarianism Via the Engineering Enterprise

Designation:
Required
Elective