Humanitarian Engineering

ECE 5050

**Credit Hours:**
3.00 - 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 have knowledge of solving problems of poverty and underdevelopment with a goal for social justice.
- Students will be able to identify and characterize engineering strategies and technology for development.
- Students are prepared to apply 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:
Elective
Required