

Howard University
Department of Electrical and Computer Engineering

EECE401 Senior Design 1

Catalog Description:

3crs. Fundamentals of design principles and engineering applications, design methodologies with analysis, synthesis and evaluations. the impact of engineering economy, ethics, and alternative solutions will be discussed . Pre-req: Seniors

Instructor and Coordinator:

Dr. Charles Kim
202-806-4821
ckim@howard.edu

Office Hours:

TR 10 - 12 & by appointment

Text:

No Textbook is required.

References:

1. Becoming a Technical Professional, by Vern Johnson and Reid Bailey, published by Kendal/Hunt Publishing Co. 3rd Edition. ISBN 13:978-0-7575-2765-4.
2. Design for Electrical and Computer Engineers, by Salt and Rothery. Wiley publication
3. Design for Electrical and Computer Engineering, by Ford and Coulston. McGraw-Hill

Goals:

This course introduces the engineering design principles, “applying technical knowledge to meet people’s needs,” and the process of design to meet the needs. Also, students learn how to become an effective team member and an effective communicator by practice. Most of all, the main goal of the course is to give students the design experience.

Topics:

1. Engineering Design Overview
2. Problem Formulation
3. Problem Solving
4. Solution Implementation
5. The Art and Science of Creativity
6. Project Management
7. Soft Skills - communication, ethics, social impact, sustainability
8. Applying a design process to meet a set of needs
9. Design

Safety/Ethics: Safety and professional ethics are emphasized in this course. See "safety manual."

ABET category Content: Engineering Science 1.0
Engineering Design: 2.0

Course Grade:

Attendance (10%)

Weekly Activities (30%)

Assignments (30%)

Process of Project (30%)

Participation in public speech or professional communication (5%)

Learning Outcomes:

- (a) Students should obtain the ability to apply knowledge of mathematics, science, and engineering.
- (c) Students should obtain the ability to function on multi-disciplinary teams
- (g) Students should obtain an ability to communicate effectively
- (j) Students should obtain knowledge of contemporary issues
- (n) Students should obtain the ability to use computers and internet as means of enhancing research and development