

College of Engineering and Architecture
COURSE SYLLABUS

1. Course number and name

EECE421 Power System Analysis and Design

2. Credits and contact hours

3 credits and 3 hours per week (TR: 9:40 – 11:00)

3. Instructor name(s)

Dr. Charles Kim (202-806-4821; ckim@howard.edu; 3014 LKD)

4. Text book, title, author, and year

William Stevenson, Jr., Elements of Power System Analysis, 4th Ed (or higher)..
Ref.: Charles Gross, Power System Analysis, 2nd Edition, John Wiley & Sons.

5. Specific course information

- a. brief description of the content of the course: The course covers basic concept of power system related quantities, series impedance of transmission lines, capacitance of transmission lines, voltage and currents on transmission lines, and system modeling.
- b. prerequisites or co-requisites: EECE203 Fundamentals of Circuit Theory
- c. indicate whether a required, elective, or selected elective course in the program:
An elective course for Electrical Engineering program.

6. Specific goals for the course

- a. specific outcomes of instruction: The student will be able to develop the thinking process of reaching a sound understanding of a broad range of topics in the power system area such as voltage regulation, transmission line and its characteristics, and voltage and current behavior ; and increase their interest in learning more about the electrical-power industry.
- b. ABET student outcomes addressed by the course: (e) An ability to identify, formulate, and solve engineering problems; (k) An ability to use techniques, skills, and modern engineering tools necessary for engineering practice.

7. Brief list of topics to be covered

- a. General Background of Power Systems
- b. Basic Concepts
- c. Transmission Line Series Impedance
- d. Transmission Line Capacitance
- e. Transmission Line Current and Voltage Relations
- f. System Modeling
- g. Network Calculations
- h. Advanced Topics: Load Flow, Economic Dispatch, Symmetrical Components

8. Howard University Statement on ADA Policies and Procedures

Howard University is committed to providing an educational environment that is accessible to all students. In accordance with this policy, students in need of accommodations due to a disability should contact the Dean of Student Services for verification and determination of reasonable accommodations as soon as possible. Note: Accommodations are not retroactive. The Office of Student Services is located in Suite 725 of the Howard Center and may be reached at (202) 238-2420.

9. Howard University Statement on Interpersonal Violence

Howard University takes sexual assault, dating violence, domestic violence, stalking and sexual harassment seriously. If a student reveals that he or she needs assistance with any of these issues, all Responsible Employees, which includes faculty, are required to share this information with the University Title IX Office (806-2550) or a student can be referred for confidential services to the Interpersonal Violence Prevention Program (IVPP) (238-2382) or University Counseling Services (806-6870). For more information about these services, please go to www.CampusSafetyFirst.howard.edu.