

NEWARK COLLEGE OF ENGINEERING

SYLLABUS AND COURSE INFORMATION

Course Name: Power Generation and Distribution

Course Number: ECET 412

Course Structure: 2-2-3 (lecture hr/wk – lab hr/wk – course credits)

Course Description: Electrical power generation systems, including hydroelectric, steam, and nuclear plants. Substation and transmission line topics are included as part of the distribution system.

Prerequisites: (ECET 205 or ECE 271) and Junior or Senior Standing

Corequisites: None

**Required, Elective,
or Selected Elective:** Elective

Required Materials: **Text:** Name: Electrical Power System Essentials, 2nd Edition
Author: Pieter Schavemaker and Lou van der Sluis
Year: 2017
ISBN: 978-1118803479

Course Outcomes: By the end of the course students are able to:

1. Gain a basic understanding of the operation of a power system grid from the generator to the customer.
2. Analyze balanced three phase power circuits, the power triangle, and power factor
3. Understand the electrical aspects of motors and generators
4. Understand basic load flow analysis using the per unit system
5. Evaluate the impact of different transmission line parameters and the impact to power flow.
6. Analyze power circuits for system protection, fault studies, and equipment selection.
7. Understand and interpret electric utility reliability standards based on inside plant (Substation) design and outside plant feeder arrangements.
8. Demonstrate ability to read-ahead course materials in advance of class lecture, and report both key points and issues to instructor before class.

Class Topics:	Power Generation	Power Transmission
	Power Distribution	3 Phase Circuits & The Power Triangle
	Power System Design	Power Flow
	Fault Analysis	System Protection
	Substation Design	Reliability

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<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Modification to Course: The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course Outline.

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Updated: 26 January 2022