

**RARITAN VALLEY COMMUNITY COLLEGE**  
**ACADEMIC COURSE OUTLINE**

**UTIL-202 Overhead Line/Substation Technology IV**

**I. Basic Course Information**

A. Course Number and Title: UTIL-202 Overhead Line/Substation Technology IV

B. New or Modified Course: MODIFIED

C. Date of Proposal: Semester: Fall Year: 2020

**D. Effective Term: FALL 2021**

E. Sponsoring Department: SCIENCE AND ENGINEERING

F. Semester Credit Hours: 5

G. Weekly Contact Hours:                      Lecture: 2  
  Directed Practice: 20 hours per week

H. Prerequisite: UTIL-201 Overhead Line/Substation Technology III

I. Laboratory Fees: NONE

J. Name and Telephone Number or E-Mail Address of Department Chair and Divisional Dean at time of approval:

Department Chair: Ed Carr, [Edward.Carr@raritanval.edu](mailto:Edward.Carr@raritanval.edu)

Divisional Dean: Sarah Imbriglio, [sarah.imbriglio@raritanval.edu](mailto:sarah.imbriglio@raritanval.edu)

**II. Catalog Description**

1. Prerequisite: UTIL-201 Overhead Line/Substation Technology III. This course is the fourth and final semester in a four part series providing the student with the knowledge and skills to work safely and competently in a supervised or unsupervised capacity. The fourth semester is the culmination of prior courses with the introduction of advanced knowledge and skills related to Motor Operates Air Brake Switch, electronic recloser controls, SF6 gas breakers, ACB maintenance, OCB timing and travel tests, calibration of various substation equipment, PT testing, phasing, switching procedures and the performance of energized primary work. The work activities in this final semester will be performed in a crew setting and will require continuous team work with fellow students. Supervised practical applications of electrical overhead line worker job duties in a setting under direct supervision of FirstEnergy personnel. Emphasis on line equipment, hot line tools, power industrial trucks, and transmission (including wood pole, steel pole, ladder, and tower climbing). Bucket, Pole Top, and Self Rescue will also be reviewed.

Safety topics include: Spill Response, Live Line Tools, Hazardous Communications, and Accident Prevention Handbook review.

### **III. Statement of Course Need**

A. UTIL 202 Overhead Line/Substation Technology IV is required the second semester of the second year and builds on UTIL 201 Overhead Line/Substation Technology III. The course provides the students with the knowledge and skill to identify, install and maintain primary underground residential distribution (URD) equipment. New techniques and safety procedures will be learned. This is the fourth course required in the sequence and provides students with the necessary background to complete the requirements in the Electric Utility Program.

- A. There is no lab component to this course.
- B. This course is not designed for transfer.

### **IV. Place of Course in College Curriculum**

- A. This course meets a program requirement for the Electrical Utility Technology A.A.S.
- B. To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, [www.njtransfer.org](http://www.njtransfer.org); b) for all other colleges and universities, go to the individual websites.

### **V. Outline of Course Content**

- A. Safety
- B. Theory
- C. Perform
- D. Operate
- E. Substation Equipment

### **VI. General Education and Course Learning Outcomes**

#### **A. General Education Learning Outcomes:**

1. Correctly identify, use and maintain tools. (NJ-GE1, NJ-GE4)
2. Inspect and operate trucks and trailers. (NJ-GE4)

**B. Course Learning Outcomes:**

1. Install an adjustable platform.
2. Operate and calibrate alarms.
3. Enter an enclosed space and facilitate a rescue.
4. Use a backhoe to dig and fill a trench.
5. Demonstrate correct bucket rescue.

**C. Assessment Instruments**

1. Written Exams
2. Hands-on Assessments(s)
3. Observance of Safety Rules & Practices
4. Final Exam

**D. VII. Grade Determinants**

1. Written Exams
2. Hands-on Assessments(s)
3. Observance of Safety Rules & Practices
4. Final Exam

Primary formats, modes, and methods for teaching and learning that may be used in the course:

- A. lecture/discussion
- B. small group work
- C. guest speakers
- D. laboratory
- E. student collaboration
- F. demonstration

**VIII. Texts and Materials**

- A. All materials will be provided by First Energy

**IX. Resources**

- A. Each student will be required to provide their own Linemen boots and flame retardant apparel.