



Course Name	Conductor Ampacity and Calculations (2020 NEC)
Credit Hours	4 Hours
Course Description	<p>This course will cover conductor ampacity and calculations according to the 2020 National Electrical Code. The following topics will be covered: allowable ampacities of insulated conductors, temperature limitations, ambient temperature correction, adjustment factors, neutral conductors, and continuous load. This course has no prerequisites.</p>
Reference Materials	NFPA 70 National Electrical Code 2020 Edition
Learning Outcomes	<p>At the completion of the course, licensees can expect to be able to:</p> <ul style="list-style-type: none">• Interpret Table 316.10 for allowable ampacities of insulated conductors.• Calculate how much current a conductor can carry based temperature ratings using Table 316.10.• Calculate what size conductor is required based on amp load and temperature rating using Table 316.10.• Describe how correction factors in Table 310.15(B)(1) are applied to ampacity values in Table 310.16.• Interpret Table 310.15(B)(1) for ambient temperature correction factors.• Calculate the allowable conductor ampacity when the ambient temperature is greater than 86°F using Table 310.15 and Table 316.10.• Describe the benefits of using division to identify the correct conductor size based on amp load and temperature.• Calculate the allowable conductor maximum ampacity and overcurrent protection device based on ambient temperature using Table 240.6(A).• Describe the method for correcting conductor ampacities for conductors installed on rooftops.

- Interpret Table 310.15(C)(1) for adjustment factors for more than three current-carrying conductors.
- Calculate the allowable conductor adjustment ampacity and overcurrent protection with more than three current-carrying conductors using Tables 310.15(C)(1) and 310.16.
- Describe when a white grounded conductor is considered a current-carrying conductor.
- Define Continuous Load as described in Article 100 of the 2020 NEC.
- Identify the minimum THW Cu. conductor size allowed for a continuous load.

Course Timed Syllabus

Attached

Method of Presentation

This online course uses text and graphics. Multiple choice questions are used to test how well the student understands the material. Each answer choice has a response which tells the student whether the selected answer is correct or not. A running score is displayed so each person can track their progress through the class. The learning event is asynchronous and formatted as a visual lecture.

Attendance Verification

This course uses personal identification questions to verify attendance. A set of five simple personal ID questions are asked of a licensee before they start a course and then again, randomly, throughout the course (at least one question is asked every 30 minutes). All questions have four preset answer choices. The licensee must answer in the same way as they did at the start of the course to be able to continue training.

This course also employs an inactivity timer, which will automatically log a licensee out of the training if the system does not sense a mouse click within 30 minutes. At the end of the course, the licensee must affirm their name, that they are the one who completed the course, and verify that their registration information is correct.

Method of Assessment

The licensee must complete all 54 multiple choice questions with a score of at least 75% in order to get credit for the course. Question choices are randomized, so each participant will have a unique testing experience. The course is also timed; participants will not get credit until they spend at least 200 active minutes in the course. Lastly,

this course is set up to allow users to go back through the section questions and re-answer questions while they meet the time requirement.

Schedule and Location

This course may be taken at any time at www.JadeLearning.com. The student may sign in and out of the course as many times as needed to complete the course.

Online Review Access

To review this course, go to www.JadeLearning.com. Click on the orange Login button on the top right and sign into the learning system using the login information below.

Username: UTEtester

Password: UTEtester

Cost

\$49.00

Instructor(s)

Jerry Durham

Conductor Ampacity and Calculations (2020 NEC) Timed Syllabus

Section	Title	Questions	Minutes
1	Table 310.16 Allowable Ampacities of Insulated Conductors. Temperature Ratings.	2	7.6
2	Table 310.16 Allowable Ampacities of Insulated Conductors. Modifiers.	2	8.0
3	Table 310.16 and 110.14(C). Temperature Limitations.	2	7.7
4	110.14(C) Electrical Connections. Temperature Limitations.	2	7.8
5	110.14(C) Electrical Connections. Temperature Limitations. Listed and Identified.	2	8.4
6	110.14(C) Electrical Connections. Temperature Limitations. Not Listed or Marked.	1	4.6
7	110.14(C) Electrical Connections. Temperature Limitations. Lowest Temperature Rating.	1	5.2
8	110.14(C) Electrical Connections. Temperature Limitations. Summary.	2	7.9
9	Table 310.15(B) Ambient Temperature Correction Factors Based on 86 Degrees F.	3	10.7
10	Table 310.15(B)(1) Ambient Temperature Correction Factors Based on 86 Degrees F.	2	8.6
11	Table 310.16. Sufficient Ampacity.	2	7.3
12	Table 310.16. Divide-By Method.	1	4.8
13	Table 310.15(B)(1), Table 310.16, and Section 110.14(C). 90°C Rated Conductor.	2	8.6
14	Table 310.15(B)(1), Table 310.16, and Table 240.6(A). Overcurrent Protection.	4	13.0
15	Table 310.15(B)(2) and Table 310.16. Rooftops.	3	12.8
16	Table 310.15(C)(1) Adjustment Factors for More than 3 Current-Carrying Conductors.	3	11.3
17	Table 310.15(C)(1) Adjustment Factors for More than 3 Current-Carrying Conductors. Divide-By Method.	3	10.8
18	Table 310.15(C)(1), and Table 240.6(A). Overcurrent Protection.	3	10.8
19	310.15(E) Neutral (Grounded) Conductor.	1	5.1
20	310.15(E) Ampacities for Conductors. Neutral Conductor.	1	4.4
21	310.15(E) Ampacities for Conductors. Neutral Conductor. 6 Current-Carrying Conductors.	2	6.7
22	Table 310.16 and 210.20(A). Conductors Minimum Ampacity and Size.	5	16.8
23	210.19(A)(1), 110.14(C)(1) and Table 310.16. Continuous Loads.	1	5.9
24	Continuous Loads and Derating. Section 210.19(A)(1), Table 310.15(B)(1), Table 310.15(C)(1) and Table 310.16.	2	9.0
25	Continuous Load, 3 Current-Carrying Conductors, Ambient Temperature.	2	8.4
Totals:		54	212.4
Time Required to Complete Course:			200