ELPT 1329 RESIDENTIAL WIRING (FALL 2015)

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ELPT 1329 RESIDENTIAL-Introductory-LAB RECOMMENDED

Course Description: Wiring methods for single family and multi-family dwellings. Includes load calculations, service entrance sizing, proper grounding techniques, and associated safety procedures.

End-of-Course Outcomes: Compute the circuit sizes needed for the installation of branch circuits, feeders, and service entrance conductors; explain the proper installation of wiring devices according to electrical codes; demonstrate grounding methods; install ground fault circuits; identify residential wiring methods; and demonstrate proper safety procedures.

COURSE MATERIAL:

NCCER 2014 Electrical 1 Trainee Guide. Pearson 2014.

Module 26105-14	Introduction to the National Electric Code
Module 26106-14	Device Boxes
Module 26108-14	Raceways and Fittings
Module 26109-14	Conductors and Cables
Module 26110-14	Basic Electrical Construction Drawings
Module 26111-14	Residential Electrical Services

Supplemental: *2014 National Electric Code*

WEEKLY SCHEDULE AND ASSIGNED HOMEWORK

WEEK 1 (8/24) -
Introductions and Course Description
Course Objectives and Goals
General Electrical Safety
Introduction to the NEC
HW: Read Pages 1-12 ("Introduction to the NEC")
HW: Review Questions 1-15 (Pgs 13-14)

WEEK 2 (8/31) -
General Electrical Safety Review
Lecture: *Introduction to the National Electric Code*
Residential Basics
Residential Services
Receptacles & GFCI/AFCI
Review for TEST 1 ("Introduction to the NEC")
Week 1 Homework Due!
HW: Review for TEST 1

WEEK 3 (9/7) -
TEST 1 ("Introduction to the National Electric Code")
PERFORMANCE TEST 1 ("Introduction to the NEC")
120 volt Receptacles
220 volt Receptacles
Outlet Boxes.
Discuss Electrical Services
Lecture on "Device Boxes"
HW: Read Pages 1-17 ("Device Boxes")
HW: Review Questions 1-10 (Pg. 18)

WEEK 4 (9/14) -
Lecture on "Device Boxes"
Calculating Box Fill
Review for TEST 2
Residential Cable TV/ CAT5
Review for TEST 2 ("Device Boxes")
Begin LAB
Week 3 Homework is due!
HW: Review for TEST 2

WEEK 5 (9/21) - **TEST 2** ("Device Boxes")
PERFORMANCE TEST 2 ("Device Boxes")
Lecture on "Raceways *and Fitting"*
LAB
HW: Read Pages 1-22 ("Raceways and Fittings")
HW: Review Questions 1-10 (Pg. 52)

WEEK 6 (9/28) - Lecture on "Raceways and Fittings"
Review for TEST 3 (Raceways and Fittings")
LAB
3 Way Switches
4 Way Switches
Appliance Loads
HW: Read Pages 23-51 ("Raceways and Fittings")
HW: Review for TEST 3

WEEK 7 (10/5) - **TEST 3** "Raceways and Fittings.
PERFORMANCE TEST 3
Week 5 & 6 Homework is due!
Lecture "Conductors and Cables"
LAB
HW: Read Pages 1-19 ("Conductors and Cables")
HW: Review Questions 1-13 (Pg. 20)

WEEK 8 (10/12) - Lecture on "Conductors and Cables"
Review for TEST 4
LAB
HW: Review for TEST 4

WEEK 9 (10/19) - **TEST 4** "Conductors and Cables"
PERFORMANCE TEST 4 "Conductors and Cables"
Review Switches and Lighting Control Methods
Review Receptacles and Lighting
Home Automation
Week 7 & 8 Homework is due!
HW: Read Pages 1-29 ("Electrical Construction Drawings")

WEEK 10 (10/26) - Lecture on "Electrical Construction Drawings"
Classroom Discussion on Construction Drawings
LAB
HW: Read Pages 30-63 ("Electrical Construction Drawings")
HW: Review Questions 1-20 (Pgs. 63 & 64)

WEEK 11 (11/2) - Lecture on "Electrical Construction Drawings"
Classroom Discussion on Construction Drawings
Review for TEST 5
Week 9 & 10 Homework is due!
LAB
HW: Review for TEST 5

WEEK 12 (11/9) - **TEST 5** "Electrical Construction Drawings"
PERFORMANCE TEST 5 "Electrical Construction Drawings"
Lecture "Residential Electrical Services
LAB
HW: Read Pages 1-30 ("Residential Electrical Services")

WEEK 13 (11/16) - Lecture on "Residential Electrical Services"
LAB
HW: Read Pages 31-63 ("Residential Electrical Services")
HW: Review Questions 1-15 (Pages 64 & 65)

WEEK 14 (11/23) - **THANKSGIVING BREAK**

WEEK 15 (11/30) - Turn in Week 12 & 13 Homework
Review for TEST 6
LAB (Cleanup and Housekeeping)
HW: Study for TEST 6 (FINAL)

WEEK 16 (12/7) - **TEST** 6 ("Residential Electrical Service")
PERFORMANCE TEST 6 ("Residential Electrical Service")

Course Evaluation and Grades:

	POINTS
TEST 1	**10**
TEST 2	**10**
TEST 3	**10**
TEST 4	**10**
TEST 5	**10**
TEST 6	**10**
PER 1	**2**
PER 2	**2**
PER 3	**2**
PER 4	**2**
PER 5	**2**
PER 6	**2**
REVIEW 1	**2**
REVIEW 2	**2**
REVIEW 3	**2**
REVIEW 4	**2**
REVIEW 5	**2**
REVIEW 6	**2**
LAB 1	**3**
LAB 2	**3**
LAB 3	**3**
LAB 4	**3**
LAB 5	**3**
LAB 6	**3**

POINTS POSSIBLE: 102

100-90 POINTS = A

89-80 POINTS = B

79-70 POINTS =C

69-60 POINTS =D

59 POINTS OR LOWER IS FAILING

PERFORMANCE TEST

26105- **Introduction to the NEC**

Use article 90 to determine the scope of the NEC; state what is covered and what is not.
Find the definition of the word "Feeder".
Look up the NEC Specification for a receptacle near a swimming pool.
Find the mi minimum bending space required for 2- 1/0 cables installed in a J-Box.

26106- **Device Boxes**

Identify the correct box size and type for a given application
Minimum Junction box size for entering and exiting a straight pull
Minimum Junction box size for entering and exiting an angled pull

26108- **Raceways and Fittings**

Identify and select various raceways and fittings for a given application
Demonstrate how to install flexible conduit
Terminate a selected raceway
Identify the correct conduit fitting for a given application

26109- **Conductors and Cables**

Install conductors in a raceway system

26110- **Basic Electrical Construction Drawings**

State the actual dimensions to scale for a given drawing
Make a material take-off with Profile Sheet 2

26111- **Residential Electrical Services**

Compute appliance, lighting, and laundry load
Compute the Loads for Large Appliances
Fill out a Panel Board Schedule
Tell how many circuits are needed for a given application

STUDENTS WITH DISABILITIES

BC is committed to providing equal education opportunities to every student. BC offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. Please contact Phil Robertson, Special Populations Counselor at 979-230-3236 for further information.

ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion violates both the policies of this course and the Student Code of Conduct. Any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication and will at a minimum result in one grade lower in this course.

Please refer to the Brazosport College Student Guide & Calendar for more information.

ATTENDANCE AND WITHDRAWAL POLICY

During each class period we will be learning basic skills/knowledge of the construction industry. If you miss a class, it is your responsibility to schedule any make-up test, homework, or in class assignment with the instructor.

If you fall behind in this class it is your responsibility to withdraw from the class. Because you stop attending class, it does not mean that you have officially withdrawn from class. To officially withdraw and receive a "W" in this class, you need to complete a withdrawal form before the official deadline which is Friday November 1, 2013.

During class, cell phones and pagers are to be turned off or set in "vibrate" mode for the entire class period. Texting is not allowed in this class. If you are expecting a call or text of an emergent nature, please inform me before class to make arrangements in handling the call.

ASSIGNMENTS AND MAKE-UP POLICY

Students are responsible for completing all reading and homework assignments prior to class. There will be a test and a performance lab for each module. In order to receive NCCER credit for the module, you must pass the written test with a minimum score of 70. You have three attempts to achieve a score of 70; however you must waited 48 hours before repeating the test. Your highest score will be used for the course grade.

COMPUTER USAGE

Computers are to be used for class assignments only. If you are using classroom computers for personal use during class, you will be asked to leave immediately. You will be counted absent and receive a zero for any work assigned during the class period. This includes homework as well as in-class assignments.

Required course materials are available at the Brazosport College bookstore, on campus or online at http://www.brazosport.edu/bookstore. A student of this institution is not under any obligation to purchase a textbook from the college bookstore. The same textbook is/may also be available from an independent retailer, including an online retailer.

SCANS COMPETENCIES:

The Secretary's Commission on Achieving Necessary Skills (SCANS) identified competencies in the area of Resources, Interpersonal, Information, Systems, and Technology; and foundation skills in the areas of Basic Skills, Thinking Skills, and Personal Qualities. This course is part of a program in which each of these competencies and skills are integrated. For application of specific SCANS competencies and skills in this course, see **Addendum A**.